# NAVAL POSTGRADUATE SCHOOL
## Monterey, California

# THESIS

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| **AN ANALYSIS OF DELAYED ENTRY PROGRAM (DEP) ATTRITION BY HIGH SCHOOL SENIORS** |
| by |
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| March 1999 |

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In fiscal year 1998, the Navy missed its recruiting goal by about 7,000 people and the Army fell short by 800. The Delayed Entry Program (DEP) allows new recruits to delay their entry into active military service; and, when individuals already recruited drop out of the DEP, the manpower planning process becomes even more difficult. High school seniors account for a relatively large proportion of individuals who leave the DEP. The primary purpose of this research was to identify factors that explain why high school seniors drop out of the DEP in such large numbers. Multivariate data analysis was used on archival data files from the Defense Manpower Data Center for fiscal years 1990 through 1996 to identify factors that explain the high attrition rate of high school seniors. A data set from Commander, Navy Recruiting Command was also used to conduct multivariate analysis. Additionally, descriptive data analysis examined high school seniors who left the DEP by their race, gender, service, and other characteristics. The results show that high school seniors who are older, female, and in the lower enlistment test categories have a comparatively high probability of dropping out of the DEP. Recommendations are offered for further research in this area.

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# AN ANALYSIS OF DELAYED ENTRY PROGRAM (DEP) ATTRITION BY HIGH SCHOOL SENIORS

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**ABSTRACT**

In fiscal year 1998, the Navy missed its recruiting goal by about 7,000 people and the Army fell short by 800. The Delayed Entry Program (DEP) allows new recruits to delay their entry into active military service; and, when individuals already recruited drop out of the DEP, the manpower planning process becomes even more difficult. High school seniors account for a relatively large proportion of individuals who leave the DEP. The primary purpose of this research was to identify factors that explain why high school seniors drop out of the DEP in such large numbers. Multivariate data analysis was used on archival data files from the Defense Manpower Data Center for fiscal years 1990 through 1996 to identify factors that explain the high attrition rate of high school seniors. A data set from Commander, Navy Recruiting Command was also used to conduct multivariate analysis. Additionally, descriptive data analysis examined high school seniors who left the DEP by their race, gender, service, and other characteristics. The results show that high school seniors who are older, female, and in the lower enlistment test categories have a comparatively high probability of dropping out of the DEP. Recommendations are offered for further research in this area.

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# I. INTRODUCTION

One need only read a daily paper, turn on a television, or leaf through a news magazine to be reminded of the recruiting problems the military is facing in the late 1990s. Both the Army and the Navy missed their recruiting goals in fiscal year (FY) 1998, and all services continue to struggle for high-quality volunteers in FY 1999.

"Missing goal" can have far-reaching effects and has gained the attention of top-level management in the Department of Defense. To counter these recruiting problems, the Service Chiefs have instituted additional "stop-gap" and corrective measures. Funding of $2.3 billion is included in the FY 1999 Defense Authorization Act for recruiter salaries and benefits, advertising, and educational incentives (Borlik, 1999). The Chief of Naval Personnel released NAVADMIN 19 JUN 1998 with the following message:

> [In a previous message, I] advised commanders, commanding officers and officers in charge of the challenges we are facing in recruiting. . .many highly motivated and enthusiastic sailors are now recruiting those men and women who will lead our navy into the twenty-first century. . .We expanded the Navy College Fund and increased enlistment bonuses. The Navy's advertising budget was also increased to attract more applicants and to improve public awareness of our Navy's mission. Despite our efforts, the recruiting environment remains challenging. It appears that we will not attain our FY 1998 accession goal of 55,321.

The military recruiting process relies heavily on the

Delayed Entry Program (DEP), which allows new recruits to postpone their entry into active duty. When persons already recruited and scheduled for service entry decide to leave the DEP, the manpower planning process becomes even more difficult to manage.

The act of dropping out of the DEP is called "attrition," in military parlance. Because this attrition occurs before actual entry into the active-duty military, it is less costly than if attrition had occurred after such entry. The average attrition rate from the DEP has ranged from 8 percent in the early 1980s to 17 percent in the 1990s (Bohn and Schmitz, 1996; Flyer and McCormick, 1999). During this same period, high school seniors have had an attrition rate of 10 to 25 percent, which is much higher than that of persons with other levels of education (Kearl and Nelson, 1990 and 1992; Bohn and Scmhitz, 1996). Over the past few years, an average of 8,000 high school seniors have attrited from the DEP annually.

It has been said that the military is only as good as its members; so, too, is the DEP only as good as those who elect to participate. If high school seniors are not motivated either personally or by recruiters, they will likely drop out of the DEP and break their commitment to join the military. If high school seniors who have a strong tendency to leave the DEP can be identified, attrition may be minimized and significant cost

savings may be realized.

## A. BACKGROUND

The DEP is a very popular tool used by each of the military services. At least 80 percent of all recruits entering the military have done so through the DEP (Morey, 1987; Hosek, et al., 1989; Kearl and Nelson, 1990 and 1992). It has served several purposes in the recruiting process since it was initiated in the mid-1960s. The Navy did not begin using the DEP until 1982, but the other services started using it at its inception (Nelson and Kearl, 1992, pp. 253-268). The DEP allows new recruits to delay their entry into active duty for a period of up to 365 days (recently extended to 18 months on a case-by-case basis). The program aids recruiters in obtaining the required number of recruits each fiscal year and in matching the recruits to training and job vacancies as they arise throughout the year. Thus, the DEP is essentially a recruit queuing device for the military's manpower managers. If DEP positioning (or "compactness" (Morey, 1987) were not available, recruiters would likely have to fill personnel shortfalls with lower quality recruits.

It is the Navy's policy that all new personnel for a coming month should be recruits out of the DEP. The Navy's recruiting goals for the second, third, and fourth months are 90, 85, and 80 percent, respectively, of persons from the DEP. For example,

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if we are in the month of May, 100 percent of all recruits needed for June would come from the DEP; 90 percent required for July would come from the DEP; 85 percent required for August would come from the DEP; and so on (Morey, 1987, p. 2). If the number of recruits remaining in the DEP were not sufficient for the services to meet their recruiting goals in the immediate future, definite shortfalls would occur, since it is not possible for the services to recruit the numbers they need in a few short months.

The DEP allows efficient resource management in an environment for military recruitment that tends to be extremely seasonal. High school students are recruited early in their senior year, allowing the recruiting commands to plan ahead for training seats and personnel requirements. Because these seniors are in the DEP for a relatively long period, they have time to reconsider their decision to enlist and examine other career options (Buddin, 1984, p. 9). Attrition from the DEP tends to upset military planning, especially if it happens just before a person's scheduled entry into active service. In these cases, training school seats cannot be filled. This turns out to be very costly for the services, because the training school seats have a steady cost whether they are filled or not. Recruiters could also miss their goal of recruits during slower periods if the DEP were not available as a "bank account" of

people who have committed to enlist.

Another reason for having the DEP is to prepare individuals for recruit training. To that end, Commander, Navy Recruiting Command (CNRC) developed a DEP Leadership Manual for recruiters that advised on how to "motivate, train, and prepare DEPers [persons in the DEP] mentally and physically for Recruit Training Command" (CNRC Instruction 1133.7A). Part of this preparation includes recruiter interviews with DEPers four times a month, attendance by DEPers at meetings at least once a month, and completion by program participants of the DEP Personnel Qualifications Standards (DEP PQS). DEP PQS is made up of twelve modules intended to assist the recruit in his or her transition to military life. The program exposes DEPers to the customs, language, and other cultural aspects of the Navy.

The first formal step in the enlistment process for a new recruit is the signing of an enlistment contract. This contract designates that the recruit will enter active duty as either a "direct ship" (within one month) or as a member of the DEP, to ship up to one year or more later. When a person decides to join the DEP, he or she must also make a psychological contract--that is, they must "adopt a commitment to the service and perceive the benefits associated with serving in the military" (Zimmerman et al., 1985). If they do not, the potential for dropping out of the DEP is higher because of dissatisfaction with the job and

unrealized expectations or goals.

Although there are several advantages to the military of having a DEP, there are also disadvantages. Recruiters must spend considerable time and effort communicating with DEPers and planning their activities. If they do not do this, the likelihood increases that DEPers will be lost before their scheduled time of entry into active duty.

It should be noted that not all attrition from the DEP is considered bad. For example, the DEP can act as a filter for recruits who would have left the military had they been "direct shippers." Additionally, it has been shown that high school seniors who complete the DEP are less likely than non-DEPers to be discharged prematurely from active duty (Cymrot, 1986, p. 10).

## B. PURPOSE OF THE STUDY

In FY 1998, the Navy fell short of its recruiting goal for active-duty enlisted personnel by about 7,000 sailors, and the Army missed its goal by 800 recruits, despite measures instituted to prevent this from happening. "What went wrong?" and "How did this happen?" are questions that we ask ourselves when we hear about this. The better question, however, is: "What can be done to ensure that this does not happen again?" If large recruiting shortfalls continue to occur, the end result of missing recruiting goals will ultimately be a decline in

military readiness.

The primary purpose of this thesis is to examine both the personal characteristics and the situational factors that contribute to high school seniors leaving the DEP. The study attempts to determine if there are patterns in the behavior of high school seniors who attrite from the DEP. It is hypothesized that high school seniors with longer DEP lengths tend to attrite less from the DEP and also from subsequent active duty. Another hypothesis is that Black women are less likely to drop out of the DEP compared with all other groups (White women, Black men, and White women). The first hypothesis assumes that, even though DEPers with longer waiting periods have greater opportunities to look for other career choices, their relatively longer time in the DEP demonstrates that they are satisfied with the military as a career for the next several years. They would also have more participation in DEP activities by the time of service entry and thus be better prepared for life on active duty. The second hypothesis is based on the assumption that, due to limited opportunities in the civilian labor market, Black women may believe that the military affords them the best career choice.

More specifically, the study attempts to address the following research questions:

1. Primary Research Questions

a.  What factors influence the behavior of high school seniors to leave the DEP?

b.  Are there differences in the background characteristics of high school seniors who attrite from the DEP and those who enter active service?

c.  Do factors that influence the attrition behavior of high school seniors differ from those that affect other person who also enter the DEP?

2.  Secondary Research Question

Do factors that affect the attrition behavior of high school seniors in the DEP vary by:

- Gender?

- Race?

- Service?

C.  **SCOPE OF THE STUDY**

The study begins with a review of previous research on DEP attrition, emphasizing high school seniors.  Cross-tabulations and multivariate statistical analyses are then conducted using special databases of DEP attrition provided by the Defense Manpower Data Center (DMDC) and CNRC.  The population in the database includes high school seniors who joined the DEP between FY 1990 and FY 1996.  Additionally, a comparative analysis is conducted of various subgroups both within and across the military services.

## D.  BENEFITS OF THE STUDY

Several previous studies have examined the issue of general attrition from the DEP.  None of these studies, however, has focused on the behavior of high school seniors, a primary target for recruiters.  By determining what causes one senior to drop out while another stays, recruiting efforts can more properly concentrate on seniors who have a greater propensity to stay. This will help to save valuable recruiting time and build a pool of DEPers who have a much greater probability of shipping out for active duty when the time comes.

## E.  ORGANIZATION OF THE THESIS

Chapter II presents a review of previous studies related to attrition from the DEP.  Chapter III discusses the research methodology used in the study.  This chapter also includes a description of the variables and terms used.  Chapter IV presents cross-tabulation tables based on the DMDC data set. Chapter V discusses the results of the data analysis for the DMDC data set, which is primarily quantitative and descriptive. Chapter VI discusses the results of the data analysis for CRNC data set.  Chapter VII presents a summary of results from Chapters IV, V, VI, and also offers conclusions and recommendations based on the study.

# II.    LITERATURE REVIEW

## A.  DELAYED ENTRY PROGRAM (DEP) STUDIES

The military services started studying DEP attrition in the mid-1980s.  Very little research, however, has addressed high school seniors in the DEP.  Consequently, the review of literature for this thesis focuses on previous studies in the more general areas of DEP attrition and the behavior of recruits during their first term of active-duty service.

Most DEP studies have attempted to forecast DEP attrition, develop DEP policies, or describe individual characteristics that affect DEP attrition.  Key factors influencing DEP attrition are the DEPers' Armed Forces Qualification Test (AFQT) scores, DEP length, and unemployment rates in the region where the DEPers live (Nelson, 1988; Nakada, 1994; Bohn and Schmitz, 1996).  Less significant factors include an individual's age, gender, and other demographic characteristics.  In general, previous studies show that time in the DEP has a positive effect on DEP attrition; that is, the longer an individual is in the DEP, the more likely he or she is to attrite (Celeste, 1985; Phillips and Schmitz, 1985; Manganaris and Phillips, 1985; Murray and Quester, 1986; Nelson, 1988; Kearl and Nelson, 1990 and 1992; Nakada, 1994; and Bohn and Schmitz, 1996).  This has been attributed to several factors, most notably exposure to other employment or education opportunities.  A recruit can seek

other employment or education opportunities while in the DEP. Coupled with a low unemployment rate, exposure to other opportunities can have a strong impact on DEP attrition (Buddin, 1984 and Nelson, 1988). In fact, research supports the idea that the DEP is a selection tool that screens potential recruits prior to accession (Cymrot, 1986). Accession is defined as entry into active duty service.

Several studies have been conducted on DEP-related issues. Flyer and Elster (1983), for example, conducted a study on "First Term Attrition Among Non-Prior Service Enlisted Personnel." Studies were also done on "Impacts of Size, Composition, and Compactness of the Delayed Entry Pool on Enlistment Contract Product" by Morey (1983); and on "Modeling the Enlisted Process for Personnel Planning" by Schmitz and Nelson (1984).

The first comprehensive study on the possible causes of DEP attrition was not undertaken until 1984. In a Westat study for the Army Research Institute, Celeste (1985) examined individual and systems characteristics believed to be associated with DEP loss. Celeste looked at the rate of enlisted contract losses from the Army's DEP from 1980 to 1983. She examined the relationships of DEP length, education, AFQT scores, age, and gender using cohort analysis. She found that longer lengths of time in the DEP resulted in a higher probability of attrition.

For example, DEP attrition jumped from 2.3 percent for seven months in the DEP to 65.8 percent for twelve months in the program. Research by Celeste also showed that women attrited twice as frequently as men, and men with high school diplomas had lower attrition rates than did those who were non-graduates. There was some inconsistency in the relationship between AFQT scores and DEP attrition. Celeste concluded that the reason for this inconsistency could be that the policy concerning the amount of time AFQT Category IV (low scoring) personnel were permitted to remain in the DEP changed after fiscal year 1981. Basically, it was noted that DEPers in AFQT Categories II and IIIA (average to above-average scores) had higher attrition rates than did those in Categories I and IIIB (highest scores and below-average scores, respectively). (Celeste, 1985)

Murray and Quester (1986), working for the Center for Naval Analyses (CNA), conducted the first DEP attrition study for the Navy. Their results were similar to that of Celeste. Also using a micro-level data set developed from the Navy's "Personalized Recruiting for Immediate and Delayed Entry" (PRIDE), Quester and Murray studied contract attrition for persons who joined the DEP in fiscal years 1983 and 1984. The authors studied DEP attrition by recruiting areas, individual characteristics, program, such as nuclear field or GENDETs, and by months in the DEP. Quester and Murray found a DEP attrition

elasticity of 1.2 with respect to time-in-DEP. This means that an additional month in the DEP results in a 20 percent increase in the tendency to attrite. Their study also showed that women and older potential recruits were considerably more likely to cancel their DEP contracts. Holding all other characteristics constant, the program for which DEPers enlisted and their AFQT scores did not appear to make much difference. Quester and Murray also found that certain months of scheduled entry onto active duty (or "shipping months") significantly affected DEP attrition. Potential recruits slated to ship in May, for example, were more likely to attrite than those who shipped in October. One possible explanation for this is that training opportunities in October tend to be more desirable than those in the month of May. Finally, the researchers found that, as the average number of recruits in the DEP per recruiter increases, the number of individuals who leave the DEP also increases. This could be because the recruiter has over-extended himself or herself. (Quester and Murray, 1986)

Phillips and Schmitz (1985) developed two models to better understand the DEP loss problem. They estimated a logistic model of Army attrition for high school seniors using a micro-level data set. They also developed another model that combined high school graduates with non-high school graduates. Maximum likelihood logistic regression estimates were made from micro-

level data for the first six months of FY 1982 and FY 1983.

Personal characteristic variables (age, gender, race, AFQT

score, and education) and policy variables (contracted DEP

length, training for Military Occupational Specialty [MOS],

region of the country, and enlistment and incentive options)

were used in the model.  The preliminary examination of the data

was accomplished using ordinary least-squares regression.  The

justification for using this two-step approach was that "OLS for

initial estimation permitted a greater number of specification

tests, and therefore a more accurate model fit."  Logistic

regression was then used to model the probability of DEP loss.

The categorical variables in the final logistic models were age,

race, gender, enlisted term, enlistment bonus, Army College

Fund, AFQT score, and DEP period in days.  Both models had a

time-in-DEP elasticity of 1.27, implying that a one-month

increase in DEP length increased DEP attrition by 27 percent.

The models also showed that women had a higher propensity to

attrite, while younger recruits tended to stay in the DEP.  The

results for the measure of high aptitude (AFQT score) proved

inconclusive for high school seniors, but high school graduates

and non-high school graduates with higher aptitude were less

likely to attrite.  DEPers who received the Army College Fund

were also less likely to attrite.  While none of these findings

is new, Phillips and Schmitz did find that in FY 1983, female

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high school seniors had lower attrition probabilities than did personnel in other categories (except for male seniors). The authors concluded that contracted DEP lengths should be kept as short as possible; that efforts be made to recruit mostly men in AFQT Categories I-IIIA and high school seniors and graduates who are 17 and 18 years old; and that recruiters make greater use of the enlistment and incentive options associated with lower DEP attrition rates. (Phillips and Schmitz, 1985)

Manganaris and Phillips (1985) focused on developing "a way to estimate optimal or near optimal DEP lengths." The authors decided to weight a statistical model using the cost minimization method, because they believed that DEP loss and attrition had different costs associated with them. (In their opinion, these two variables are different.) They concluded that the preferred range to be in the DEP for male high school seniors and male high school graduates lies between two to nine months. However, male non-graduates and all women should only stay in the DEP for six to nine months. The marginal savings realized by lengthening an individual's time-in-DEP by one month was estimated. The results showed that male seniors had fewer saving per individual compared to the other categories because they tended to remain longest in the DEP. These savings ranged from $155 for AFQT Category I-IIIA male seniors to $216 for AFQT Category IV male seniors. (Manganaris and Phillips, 1985)

Cymrot (1986) conducted a study, "Early Attrition in FY85: The Effects of the Delayed Entry Program, Accession Month, and Enlistment Program," for the Navy. This study examined recruits who actually joined the Navy in FY 1985. Cymrot reevaluated the "Success Chances for Recruits Enter the Navy" (SCREEN) table (an index to predict an individual's likelihood of first-term attrition), validating it with more recent data, and exploring other factors that could influence someone to leave the DEP. SCREEN was used as a basic tool for estimating the probability that a recruit would attrite--for example, that a young man with certain characteristics would complete one year of military service. Although the original study used to develop SCREEN concentrated on personal characteristics such as age, educational status, AFQT category, and gender, Cymrot focused on the way the recruit enters the Navy. He found that recruits who joined the DEP tended to be of higher quality than "direct shippers." He adjusted for this and still found that DEPers had a higher likelihood of completing their military enlistment. While Cymrot did not specifically deal with high school seniors, his model showed that the DEP could be a filtering and selection tool. Thus, if seniors stay in the DEP, the military can then assume that they will also complete their first term of active duty. (Cymrot, 1986)

Nelson (1988) developed two DEP attrition models: (1) a

macro-level time-series model used to examine DEP loss for the entire Army; and (2) a micro-level model to identify factors that influence the behavior on individuals in the DEP. The variables included in the macro-level model (that ranged from FY 1984 to FY 1987) were youth unemployment rate, average DEP length, and the number of individuals in the DEP per-recruiter. Ordinary-least-squares regression was used to estimate the model. The information in data files for the micro-level model was from FY 1986 and FY 1997 and a logistic regression technique was used for this model. All the variables in the first model (macro) were significant (youth unemployment rate, size of the DEP per recruiter, and average DEP length) at the 1-percent level. Unemployment rate of 16- to 19-year olds was the most significant variable with 40 percent of the increase in DEP loss rate from FY 1986 to FY 1987 attributed to this variable--a significant negative correlation. Nelson also found that DEP attrition increased the longer the recruit stayed in the DEP. Age, DEP length, and AFQT scores were found to be most significant in the micro model. Age and DEP length had a positive correlation to DEP attrition, while AFQT scores had a negative correlation. (Nelson, 1988)

Kearl and Nelson (1990) updated the model of the Phillips/Schmitz (1985) micro-level data set by incorporating military/civilian ray ratios and unemployment data. The three

categories of the explanatory variables were personal characteristics, recruiting policies, and economic conditions. All variables were categorical except for age and AFQT scores. In the earlier study, both high school graduates and non-high school graduates were combined. In the later study, Kearl and Nelson ran separate logistic models for these groups so that four separate models could be developed (whole group, high school seniors, high school graduates, and non-high school graduates). The DEP variable was separated into short- and long-DEP. This may seem arbitrary, but there are substantial differences between them. High school seniors accounted for 35.2 percent of the sample. It was not surprising to note that seniors were younger and had fewer dependents. Individuals in the long-DEP were more likely to enroll in the Army College Fund (ACF) and to enlist in MOSs with longer training times. (High school seniors had a greater propensity to enroll in the ACF, but enlisted in MOSs with fewer training days.) In contrast, persons in the short-DEP were more likely to enlist for longer terms and to be from geographic regions with higher unemployment rates. It was also noted that Blacks tended to enlist in the short-DEP; and, while more women tended to enlist in the long-DEP, they comprised a smaller fraction of senior enlistees. Individuals who entered the DEP for less than four months accounted for about 54.8 percent of the population. The largest

effects upon DEP loss were found in personal characteristics for all models. Of these, the dependent variable accounted for the largest effect. Recruits with dependents were expected to have a 10-percent lower rate of attrition. This is especially notable for high school seniors with long DEP lengths. The researchers also found in the full sample that high school seniors had a significantly higher DEP loss probability than did high school graduates. While Quester and Murray (1986) support this result, it contradicts the findings of Phillips and Schmitz (1985) and Celeste (1985). Results of the full model showed a 10-percent increase in the unemployment rate led to a 3 percent decrease in DEP attrition, or a -0.03 elasticity. Similarly, a 10-percent increase in military pay relative to civilian pay showed a 4.6-percent decrease in DEP attrition. For high school seniors, the elasticity was -0.92. (Kearl and Nelson, 1990)

Cooke and Pflaumer (1991) reviewed DEP attrition research. Their main conclusion from reviewing these studies was that individuals learned about a job through experience. In other words, high school seniors would not know if the DEP (and the military) were what they wanted until they actually spent time in the DEP. The review also focused on the relationship between time-in-DEP and first-term attrition. The researchers found "a robust, negative relationship" (Nakada, 1994, pp. 3). If the time individuals spend in the DEP were increased, this would

lower attrition. For high school seniors, however, this was not true. Increasing DEP length for male high school seniors resulted in less attrition than that of male graduates and female recruits. (Cooke and Pflaumer, 1991)

Kearl and Nelson (1992) also conducted a study on the Army's DEP for fiscal years 1986 and 1987. The characteristics they studied were age, gender, race, number of dependents, and high school status. Because the economy was relatively good in the mid-1980s (and unemployment was low), recruits were not only hard to attract but were also hard to keep. With micro-level data, the authors estimated DEP loss using binary-logistic regression. Separate models were estimated for high school seniors, high school graduates, and non-high school graduates. To further differentiate the data and to increase its explanatory power, Kearl and Nelson divided the observations into long- and short-DEP lengths. (A time period of less than four months in the DEP was considered to be short, while four or more months in the DEP was considered to be long.) Again, they noted that persons in the short-DEP have longer enlistment terms and were from regions with higher unemployment rates. In contrast, recruits in the long-DEP selected the Army College Fund and enlisted in MOSs with longer training times. The most significant variables were age, number of dependents, and FY 1987 for high school seniors in the short-DEP, while number of

dependents, female, and age were most significant for high school seniors in the long-DEP. Seniors with dependents had about a 20-percent lower likelihood of attriting; women had about 11-percent increase in the likelihood of attrition; and an earnings ratio accounted for an 8-percent decrease in DEP loss. For high school seniors in the short-DEP, an additional month decreased the possibility of attrition by 1.2 percent. However, there was an increased possibility of 2 percent for individuals in the long-DEP. (The DEP variable was significant at the 1-percent level for those in the long-DEP.) Basically, if a recruit is younger, Black, and male, there is less likelihood that he or she will drop out of the DEP. (Kearl and Nelson, 1992)

Nakada (1994) updated Quester and Murray's (1986) study with a study on DEP attrition that looked specifically at recruits, recruiters, contracts, and economic factors. He focused on historical Navy DEP behavior, hoping to identify factors that affect continuation in the DEP. As with Quester and Murray (1986), Nakada found similar attrition rates for high school diploma graduates (11.9 percent for Nakada compared with 11.2 percent for Quester and Murray). The rate of DEP attrition for high school seniors, however, rose significantly in Nakada's study. He reported a 20.6-percent DEP loss rate, 6.6-percentage points higher than that reported by Quester and Murray (1986).

Overall, high school seniors accounted for 53 percent of all persons who attrited from the DEP. Nakada also found that high school seniors had high DEP attrition rates. This rate declined as the individual aged but rose again for those over 21 years of age. His results show that recruits in AFQT Categories I, II, and IIIA tended to have lower DEP attrition rates. Nakada also found that Black recruits had a slightly lower DEP loss rate than did recruits in any other racial or ethnic group. As with Celeste (1985), Nakada found that the longer one stays in the DEP, the greater the likelihood of attrition. This study showed a much wider range of attrition rates, from 8.4 percent for those with one month time-in-DEP to 17.2 percent for those with six months of time-in-DEP. In comparison, Quester and Murray (1985) found a 7.2-percent rate of attrition for those with a one-month stay and an 11.2-percent loss rate for persons with a six-month stay in the DEP. Recruiter and economic variables were included in this study, but they had little effect on the model. Further, county unemployment rates only had a small but negative effect on DEP attrition. Nakada also noted that, if recruits had recruiters who were E-7 and above, they were less likely to attrite from the DEP. (Nakada, 1994)

Bohn and Schmitz (1996) investigated the reason why overall attrition from the Navy has increased. Their study tracked recruits from the time when they signed enlistment contracts to

join the DEP, through accession into the Navy, through completion of recruit training, and into the fleet. The authors noted that the DEP loss rate was 16.7 percent at a cost of $5,400 per contract. (This is relatively small compared with the cost of attrition after recruit training, $12,000, and from the fleet, $20,000. But, in the aggregate, the cost of DEP attrition is substantial.) The DEP attrition model was divided into persons who enlisted while still high school seniors and those who enlisted from the workplace. The researchers found that more women enlisted from the workplace than as high school seniors, and attrition was higher for high school seniors than for graduates (14 percent compared with 21 percent). Since time in DEP was the most important factor for explaining attrition, to test the actual effect of this variable, the authors examined it in four different ways. They squared the time-in-DEP variable, created an interaction variable for women in the DEP, and also squared this new variable. (The squared variables were "to test whether long periods in DEP are different from simple linear extrapolations.") The results from this study indicate that women tended to have a higher likelihood of attriting from the DEP than did their male counterparts.

## B. SUMMARY OF FINDINGS

There is obviously a problem with DEP attrition in the military services. Previous studies have examined many

different factors to identify those that have a causal effect on DEP loss. To date, while there is some agreement in the studies, there is still much more disagreement. Common to all studies is the time-in-DEP factor. The amount of time a recruit spends in the DEP tends to be directly correlated to whether or not the individual stays in the DEP until entry into active duty. Not everyone agrees if the relationship is negative or positive, however. Most studies (Celeste, 1985; Phillips and Schmitz, 1985; Manganaris and Phillips, 1985; Murray and Quester, 1986; Nelson, 1988; Kearl and Nelson, 1990 and 1992; Nakada, 1994; and Bohn and Schmitz, 1996) find that there is a greater chance of attrition the longer the recruit remains in the DEP. This is because, while in the DEP, individuals have ample opportunities to consider other options.[1]

Enlistment test scores are also found to have a large impact on DEP attrition. For example, Nelson (1988) and Nelson and Kearl (in both studies, 1990 and 1992) found that higher AFQT scores are related to a lower probability of DEP attrition. Phillips and Schmitz (1985) and Celeste (1985), however, are inconclusive on this point.

All of the studies found that women had a greater likelihood than did men of dropping out of the DEP. Previous

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[1] The services do not legally bind the recruit if he or she wants to leave, even though DEPers are contractually obligated to the military. If the individual is going to leave, it is best that he or she does so before entering active duty.

studies also found that age was an excellent predictor of DEP loss; that is, younger recruits tended to stay longer.

Differences were seen in whether high school seniors are more likely to attrite than graduates or persons in the work force. While Nelson (1988), Nelson and Kearl (1990 and 1992), and Bohn and Schmitz (1996) found high school seniors were more likely to attrite, Phillips and Schmitz (1985) and Cooke and Pflaumer (1991) found that seniors generally had lower attrition probabilities.

Other variables that helped to determine DEP loss were number of dependents, contract changes, DEP size and location, youth unemployment, and recruiters' rank.

## III.    DATA AND METHODOLOGY

### A.    DATA

The raw data for this study were provided by the Defense Manpower Data Center (DMDC) in Monterey, California. DEP data were also obtained from Commander, Navy Recruiting Command (CNRC).    Unemployment data were obtained from the Bureau of Labor Statistics (BLS) web page.    These data were merged with the raw data sets from DMDC and CNRC.    Several Statistical Analysis System (SAS) programs were written to read and manipulate the data.    SAS is a statistical software program that enables the user to control data access and to analyze data.

The data consist of observations on all individuals who signed an enlistment contract during FY 1990 through FY 1996. The DMDC data set contains cohort accession files, with a total of 1,411,140 observations.    The study years (1990-1996) were chosen because they are the most recent periods in this decade for which final disposition--either DEP loss or active duty accession--is known for all enlistees.    (Final disposition could be determined for about 97 percent of the observations.)

The data set was restricted to high school seniors with no prior active duty service, resulting in a total of 307,931 observations.    Regional unemployment data were based on BLS Local    Area    Employment    Data    from    the    BLS    web    site, http://stats.bls.gov.

Table 3.1 presents a description of the characteristics of the individuals who signed enlistment contracts and spent some time in the DEP. The average individual is about 17.6 years old, had average time in the DEP of 9.1 months, and is a high

Table 3.1 Descriptive Characteristics of the Full Sample
in the Data Set for FYs 1990-1996

| Variable | Value | Full Sample |
| --- | --- | --- |
| Army | Percent | 25.5 |
| Navy | Percent | 34.6 |
| Marine Corps | Percent | 28.2 |
| Air Force | Percent | 11.7 |
| Men | Percent | 86.8 |
| Single | Percent | 99.0 |
| Black | Percent | 15.7 |
| Non-Black | Percent | 84.3 |
| AFQT1_2 | Percent | 39.7 |
| AFQT3A | Percent | 31.5 |
| AFQT3B | Percent | 28.5 |
| AFQT4 | Percent | 0.3 |
| Non-Prior-DEP Recruit | Percent | 96.9 |
| DEP Waiver | Percent | 98.4 |
| No Dependents | Percent | 98.2 |
| Age | Mean Years | 17.6 |
| Dropped from DEP | Percent | 28.6 |
| Contract Months in DEP | Mean Months | 9.1 |

Source: Derived from a special database provided by the Defense Manpower Data Center.

quality recruit (in AFQT Groups I-IIIA). Men represent 86.8 percent and Blacks are 15.7 percent. Ninety-nine percent of the recruits are single and have no dependents. The Navy has the highest percentage (34.6) of DEPers and the Air Force the lowest percentage (11.7). Most of the recruits entering the DEP receive DEP waivers, and there is a 28.6-percent rate of attrition. (Waivers are authorizations for enlistment that are granted to DEP participants when they do not meet certain standards for acceptance into the military.)

## B. METHODOLOGY: CONCEPTUAL MODEL

### 1. Multivariate Data Analysis

Multivariate data analysis is used in this study to estimate the relationships between a set of explanatory variables and the dependent variable, DEP completion. A binary logistic regression model, employing maximum-likelihood techniques, is used to determine the probability of attrition (or completion) of high school seniors from the DEP. This model is appropriate, since the dependent variable (DEPLOSS) is dichotomous, distinguishing between those who stay in the DEP and those who do not. These decisions are appropriately estimated as probabilities, with a specification that does not allow the estimated probabilities to fall outside the zero-one range. The dependent variable is defined as:

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Yi = 0, if the individual 'i' enters military service and
     1, if the individual 'i' is a DEP loss.

The equation for the relationship among the variables can be expressed as:

Yi = P(Xi) + $\varepsilon\iota$

where

$$P(Xi) = P[Yi = 1 | Xi] = P = \frac{1}{1 + e-BX},$$

'P(Xi)' is the probability that the $i_{th}$ individual will attrite from the DEP;

$\beta$ is the coefficient vector to be estimated and;

X is a vector of dependent variables.

Caution must be used when interpreting the coefficient of a logistic regression. The estimated coefficients do not indicate the increase in the probability of a DEP loss given a one-unit increase in the variable associated with the coefficient. What the computed results do indicate is the amount by which the probability of DEP loss is multiplied for a one-unit change in the variable associated with the coefficient.

The partial derivatives or the slopes of the X variables with respect to the attrition probability obviously vary over the zero-one probability interval. It is calculated as follows:

$$\frac{dP}{dX} = \frac{(Be^{-BX})}{(1 + e^{-BX})} \cdot \frac{1}{1 + e^{-BX}} \text{ and } 1 - P = \frac{e^{-BX}}{1 + e^{-BX}}$$

## 2. Cross-tabulation Tables

Several cross-tabulated tables are created to look at high school seniors who drop out of the DEP by race, gender, and service.

## C. RESTRICTION

Many studies have been done on DEP attrition by educational category. The present study, however, is limited to high school seniors in the DEP. This helps to highlight behaviors, if any, that high school seniors exhibit.

# IV. CROSS-TABULATION TABLES FROM DMDC DATA SET

Over 1.4 millions recruits entered the DEP from FY 1990 through FY 1996. As previously noted, high school seniors numbered about 308,000 over that period. The following tables show total DEP accessions and high school senior DEP accessions by several different categories.

## A. TOTAL DEP ACCESSIONS

### 1. Education Level

Table 4.1 shows the percentage distribution of all DEP participants by education level, Service, and gender for FY 1990 through FY 1996. (In the table, "college" refers to persons with any college attendance; "graduate' refers to high school graduates; "senior" to persons in their last year of high school; and "non-graduate" refers to persons who dropped out of high school.) In all three categories, the Marine Corps has a significantly higher percentage of high school seniors in its DEP when compared with that of the other three Services. For example, about 34 percent of seniors who are men between FYs 1990 and 1996 have come through the Marine Corps. The Navy has the second highest percentage of seniors in its DEP pool. Basically, these percentages confirm that the Marine Corps and the Navy are the heaviest recruiters of the high school seniors in the DEP. The service with the most graduates in its DEP is the Air Force (about 79 percent), which is above the DOD average

of 70 percent.   The education category that is least represented

in the DEP is "college."

Table 4.1 Percentage Distribution of all DEP Participants by
Education Level, Service, and Gender, FYs 1990-1996

| EDUCATION LEVEL BY GENDER | MILITARY SERVICE | | | | TOTAL DEP | ACCESSION |
|---|---|---|---|---|---|---|
| | ARMY | NAVY | USMC | USAF | PERCENT | NUMBER |
| **MEN** | | | | | | |
| COLLEGE | 1.0 | 0.6 | 0.3 | 1.5 | 0.8 | 9,459 |
| GRADUATE | 73.9 | 65.9 | 61.1 | 79.3 | 69.5 | 820,815 |
| SENIOR | 16.8 | 24.9 | 33.4 | 15.8 | 22.6 | 267,155 |
| GED | 3.0 | 3.0 | 1.9 | 0.8 | 2.5 | 29,156 |
| NON-GRADUATE | 5.3 | 5.6 | 3.4 | 2.6 | 4.6 | 54,592 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **1,181,177** |
| | | | | | | |
| **WOMEN** | | | | | | |
| COLLEGE | 1.7 | 1.1 | 0.6 | 1.7 | 1.4 | 3,311 |
| GRADUATE | 78.1 | 71.4 | 64.8 | 79.2 | 75.6 | 173,742 |
| SENIOR | 13.5 | 21.9 | 31.2 | 15.9 | 17.7 | 40,776 |
| GED | 1.3 | 1.2 | 0.8 | 0.7 | 1.1 | 2,493 |
| NON-GRADUATE | 5.4 | 4.4 | 2.5 | 2.5 | 4.2 | 9,641 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **229,963** |
| | | | | | | |
| **ALL** | | | | | | |
| COLLEGE | 1.1 | 0.7 | 0.3 | 1.6 | 0.9 | 12,770 |
| GRADUATE | 74.7 | 66.7 | 61.3 | 79.3 | 70.5 | 994,557 |
| SENIOR | 16.1 | 24.4 | 33.3 | 15.8 | 21.8 | 307,931 |
| GED | 2.7 | 2.8 | 1.8 | 0.8 | 2.2 | 31,649 |
| NON-GRADUATE | 5.3 | 5.4 | 3.4 | 2.6 | 4.6 | 64,233 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **1,411,140** |

Source: Derived from a special database provided by the Defense Manpower Data Center.

Comparing the data by race, Table 4.2 shows that Blacks are

represented at a higher level as graduates than are non-Blacks.

The Air Force has the highest percentage of Black graduates at

81 percent, followed very closely by the Army at 80.8 percent.

When looking at high school seniors, however, there are

proportionately more non-Blacks who are seniors.   For example,

at the DOD level, 22.3 percent of Non-Blacks are seniors,

compared with 19.5 percent of Black DEPers.   The percentages of

Non-Blacks are also higher in all education categories other

than that of high school graduates.

Table 4.2 Percentage Distribution of all DEP Participants by
Education Level, Service, and Race, FYs 1990-1996

| EDUCATION LEVEL BY RACE | MILITARY SERVICE | | | | TOTAL DEP ACCESSIONS | |
| --- | --- | --- | --- | --- | --- | --- |
| | ARMY | NAVY | USMC | USAF | PERCENT | NUMBER |
| **BLACK** | | | | | | |
| COLLEGE | 1.0 | 0.5 | 0.2 | 1.5 | 0.8 | 1,908 |
| GRADUATE | 80.8 | 70.4 | 63.1 | 81.0 | 75.0 | 186,659 |
| SENIOR | 13.3 | 23.4 | 32.7 | 14.7 | 19.5 | 48,468 |
| GED | 1.3 | 1.8 | 1.2 | 0.5 | 1.3 | 3,360 |
| NON-GRADUATE | 3.7 | 3.9 | 2.7 | 2.3 | 3.5 | 8,630 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **249,025** |
| | | | | | | |
| **NON-BLACK** | | | | | | |
| COLLEGE | 1.2 | 0.7 | 0.3 | 1.6 | 0.9 | 10,862 |
| GRADUATE | 73.0 | 65.8 | 61.1 | 79.0 | 69.5 | 807,898 |
| SENIOR | 16.9 | 24.7 | 33.3 | 16.0 | 22.3 | 259,463 |
| GED | 3.1 | 3.0 | 1.9 | 0.8 | 2.4 | 28,289 |
| NON-GRADUATE | 5.8 | 5.8 | 3.5 | 2.6 | 4.8 | 55,603 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **1,162,115** |

Source: Derived from a special database provided by the Defense Manpower Data Center.

## 2. DEP Status

As expected, Table 4.3 shows that women tended to attrite more heavily from the DEP, at an average of 20 percent, than did men (12.2 percent). This DEP attrition rate for women in the Marine Corps (26.2 percent) was notably higher than that of women in the Army, Navy, and the Air Force. Women in the Navy had the second highest DEP attrition rate (21 percent). Additionally, for men and women recruits, the Marine Corps has the highest proportion (at 5.0 and 4.2 percent, respectively) of recruits who had dropped out of the DEP previously but later decided to enter active duty. For men in this same category, the Air Force (at 4.2 percent) has the second-highest proportion, while the Navy (at 3.8 percent) is the second-highest for women.

Table 4.3 Percentage Distribution of all DEP Participants by
DEP Status, Service, and Gender, FYs 1990-1996

| DEP STATUS BY GENDER | MILITARY SERVICE | | | | TOTAL DEP ACCESSIONS | |
| --- | --- | --- | --- | --- | --- | --- |
| | ARMY | NAVY | USMC | USAF | PERCENT | NUMBER |
| **MEN** | | | | | | |
| DEP/DROP | 11.8 | 12.2 | 15.3 | 8.6 | 12.2 | 144,034 |
| DEP/ACT | 3.5 | 3.9 | 5.0 | 4.2 | 4.0 | 47,562 |
| DEP/ENL | 84.7 | 83.9 | 79.7 | 87.2 | 83.8 | 989,581 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **1,181,177** |
| | | | | | | |
| **WOMEN** | | | | | | |
| DEP/DROP | 19.5 | 21.0 | 26.2 | 17.6 | 19.9 | 45,855 |
| DEP/ACT | 3.3 | 3.8 | 4.2 | 3.7 | 3.6 | 8,307 |
| DEP/ENL | 77.2 | 75.2 | 69.6 | 78.7 | 76.4 | 175,801 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **229,963** |
| | | | | | | |
| **ALL** | | | | | | |
| DEP/DROP | 13.3 | 13.5 | 16.0 | 10.9 | 13.5 | 189,889 |
| DEP/ACT | 3.5 | 3.9 | 4.9 | 4.1 | 4.0 | 55,869 |
| DEP/ENL | 83.3 | 82.6 | 79.1 | 85.1 | 82.6 | 1,165,382 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **1,411,140** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

The data in Table 4.4 show that the probability of Blacks to drop out of the DEP is lower than that of non-Blacks across the services. For example, the attrition rate for Blacks at the DOD level is 12.8 percent compared to that of non-Blacks at 13.6 percent. The Marine Corps seems to be the service with the highest likelihood of DEP attrition for both Blacks and non-Blacks when compared to the Army, Navy, and the Air Force. Also noted, the service with the lowest DEP attrition rate as seen in Table 4.4 is the Air Force. Its DEP loss rate is about 3-percentage points lower than that of the DOD's average.

Table 4.4 Percentage Distribution of all DEP Participants by
DEP Status, Service, and Race, FYs 1990-1996

| DEP STATUS BY RACE | MILITARY SERVICE | | | | | |
|---|---|---|---|---|---|---|
| | ARMY | NAVY | USMC | USAF | TOTAL DEP PERCENT | ACCESSIONS NUMBER |
| **BLACK** | | | | | | |
| DEP/DROP | 13.0 | 12.9 | 15.1 | 9.4 | 12.8 | 31,985 |
| DEP/ACT | 3.8 | 4.3 | 5.2 | 3.8 | 4.2 | 10,422 |
| DEP/ENL | 83.1 | 82.8 | 79.7 | 86.9 | 83.0 | 206,618 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **249,025** |
| | | | | | | |
| **NON-BLACK** | | | | | | |
| DEP/DROP | 13.3 | 13.7 | 16.1 | 11.1 | 13.6 | 157,904 |
| DEP/ACT | 3.3 | 3.8 | 4.9 | 4.1 | 3.9 | 45,447 |
| DEP/ENL | 83.3 | 82.6 | 79.0 | 84.8 | 82.5 | 958,764 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **1,162,115** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

## 3. Contracted Months in DEP

Table 4.5 shows the percentage distribution of all DEP participants by contracted months in the DEP, gender, and service from FY 1990 through FY 1996. A significant difference is found for the Air Force, compared with the other services, in the percent distribution of contracted months for which a recruit signed. In the Air Force, the vast majority of recruits (over 80 percent) signed up for 10-13 months. This is in direct contrast to the other services, especially the Army, which had fewer than 12 percent of its recruits in the 10-13-month range during the FY 1990-1996 period. At the same time, nearly half of Army recruits and about one-third of recruits in the Navy and Marine Corps were in the DEP for just three months or less. The percentage distributions for men and women within the services are generally similar when compared by months in DEP.

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Table 4.5 Percentage Distribution of All DEP Participants by
Contracted Months, Service, and Gender, FYs 1990-1996

| CONTRACTED MONTHS IN DEP BY GENDER | MILITARY SERVICE | | | | TOTAL DEP ACCESSIONS | |
|---|---|---|---|---|---|---|
| | ARMY | NAVY | USMC | USAF | PERCENT | NUMBER |
| **MEN** | | | | | | |
| 0-3 | 48.5 | 37.0 | 29.5 | 8.4 | 35.2 | 411,724 |
| 4-6 | 25.8 | 22.8 | 18.1 | 5.7 | 20.3 | 238,177 |
| 7-9 | 13.2 | 20.1 | 20.9 | 3.2 | 15.5 | 181,778 |
| 10-13 | 12.5 | 20.2 | 31.4 | 82.7 | 29.0 | 339,029 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **1,170,708** |
| | | | | | | |
| **WOMEN** | | | | | | |
| 0-3 | 47.7 | 38.2 | 29.5 | 6.8 | 33.4 | 75,509 |
| 4-6 | 32.9 | 25.7 | 22.3 | 4.8 | 23.1 | 52,126 |
| 7-9 | 12.0 | 19.0 | 24.2 | 2.7 | 12.5 | 28,365 |
| 10-13 | 7.4 | 17.1 | 24.0 | 85.6 | 31.0 | 70,077 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **226,077** |
| | | | | | | |
| **ALL** | | | | | | |
| 0-3 | 48.4 | 37.2 | 29.5 | 8.0 | 34.9 | 487,233 |
| 4-6 | 27.1 | 23.2 | 18.4 | 5.5 | 20.8 | 290,303 |
| 7-9 | 13.0 | 19.9 | 21.2 | 3.1 | 15.0 | 210,143 |
| 10-13 | 11.5 | 19.7 | 30.9 | 83.4 | 29.3 | 409,106 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **1,396,785** |

Source: Derived from a special database provided by the Defense Manpower Data Center.

As seen in Table 4.6, 52 percent of Blacks in the Army tended to sign DEP contracts for 0-3 months, compared with 47.3 percent for Non-Blacks. Again, the Air Force has a substantially higher proportion of recruits signing DEP

Table 4.6 Percentage Distribution of All DEP Participants by
Contracted Months, Service, and Race, FYs 1990-1996

| CONTRACTED MONTHS IN DEP BY RACE | MILITARY SERVICE | | | | TOTAL DEP ACCESSIONS | |
|---|---|---|---|---|---|---|
| | ARMY | NAVY | USMC | USAF | PERCENT | NUMBER |
| **BLACK** | | | | | | |
| 0-3 | 52.1 | 40.1 | 30.6 | 7.7 | 40.0 | 98,458 |
| 4-6 | 27.8 | 24.6 | 18.6 | 5.4 | 22.8 | 56,219 |
| 7-9 | 11.6 | 19.3 | 21.4 | 3.0 | 14.5 | 35,655 |
| 10-13 | 8.4 | 16.0 | 29.4 | 83.9 | 22.7 | 55,749 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **246,081** |
| | | | | | | |
| **NON-BLACK** | | | | | | |
| 0-3 | 47.3 | 36.5 | 29.4 | 8.1 | 33.8 | 388,775 |
| 4-6 | 26.9 | 22.9 | 18.4 | 5.5 | 20.3 | 234,084 |
| 7-9 | 13.4 | 20.1 | 21.1 | 3.1 | 15.2 | 174,488 |
| 10-13 | 12.4 | 20.6 | 31.2 | 83.4 | 30.7 | 353,357 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **1,150,704** |

Source: Derived from a special database provided by the Defense Manpower Data Center.

contracts for 10-13 months, whether looking at Blacks or Non-

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Blacks.

## 4. Year of DEP Entry

The data in Table 4.7 show that men and women combined had an average attrition rate from the DEP of 13.5 percent between

Table 4.7 Percentage Distribution of all DEP Participants by Year of DEP Entry, DEP Status, and Gender, FYs 1990-1996

| YEAR OF DEP ENTRY BY GENDER | DEP/DROP | DROP/ACT | DEP/ENL | TOTAL DEP ACCESSIONS | |
|---|---|---|---|---|---|
| | | | | PERCENT | NUMBER |
| **MEN** | | | | | |
| 1990 | 11.4 | 4.8 | 83.8 | 100.0 | 215,258 |
| 1991 | 11.5 | 4.6 | 84.0 | 100.0 | 194,379 |
| 1992 | 12.2 | 4.7 | 83.1 | 100.0 | 175,148 |
| 1993 | 11.9 | 5.0 | 83.1 | 100.0 | 171,150 |
| 1994 | 12.1 | 4.5 | 83.4 | 100.0 | 154,614 |
| 1995 | 13.8 | 2.4 | 83.9 | 100.0 | 157,315 |
| 1996 | 13.4 | 0.6 | 86.0 | 100.0 | 113,313 |
| **TOTAL** | **12.2** | **4.0** | **83.8** | **100.0** | **1,181,177** |
| | | | | | |
| **WOMEN** | | | | | |
| 1990 | 20.9 | 4.2 | 74.9 | 100.0 | 32,682 |
| 1991 | 18.2 | 4.6 | 77.2 | 100.0 | 28,891 |
| 1992 | 16.5 | 3.9 | 79.5 | 100.0 | 32,196 |
| 1993 | 19.3 | 4.6 | 76.1 | 100.0 | 34,031 |
| 1994 | 19.6 | 4.6 | 75.8 | 100.0 | 35,489 |
| 1995 | 22.4 | 2.6 | 75.0 | 100.0 | 38,407 |
| 1996 | 22.4 | 0.5 | 77.1 | 100.0 | 28,267 |
| **TOTAL** | **19.9** | **3.6** | **76.4** | **100.0** | **229,963** |
| | | | | | |
| **ALL** | | | | | |
| 1990 | 12.6 | 4.7 | 82.6 | 100.0 | 247,940 |
| 1991 | 12.4 | 4.6 | 83.1 | 100.0 | 223,270 |
| 1992 | 12.8 | 4.6 | 82.5 | 100.0 | 207,344 |
| 1993 | 13.1 | 5.0 | 81.9 | 100.0 | 205,181 |
| 1994 | 13.5 | 4.5 | 82.0 | 100.0 | 190,103 |
| 1995 | 15.5 | 2.4 | 82.1 | 100.0 | 195,722 |
| 1996 | 15.2 | 0.6 | 84.2 | 100.0 | 141,580 |
| **TOTAL** | **13.5** | **4.0** | **82.6** | **100.0** | **1,411,140** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

FYs 1990 and 1996. Women tended to have a consistently higher rate of attrition from the DEP than did men. The average DEP

loss rate for women over the period was 19.9, compared with an average loss rate of 12.2 percent for men. The percentage of recruits who attrited in the past, but later entered active duty (DROP/ACT), is also slightly higher for men (4 percent) than for women (3.6 percent).

Table 4.8 show that the DEP attrition rates for Blacks and Non-Blacks are similar from one year to the next, although slightly higher for Non-Blacks. Both groups have average rates of about 13 percent. These percentages do fluctuate somewhat over the years, with relatively higher attrition in the most recent years of 1995 and 1996. About 4 percent of both Blacks

Table 4.8 Percentage Distribution of all DEP Participants by Year of DEP Entry, DEP Status, and Race, FYs 1990-1996

| YEAR OF DEP ENTRY BY RACE | DEP/DROP | DROP/ACT | DEP/ENL | TOTAL DEP ACCESSIONS PERCENT | NUMBER |
|---|---|---|---|---|---|
| **BLACK** | | | | | |
| 1990 | 12.7 | 5.1 | 82.2 | 100.0 | 48,735 |
| 1991 | 12.1 | 5.1 | 82.8 | 100.0 | 34,003 |
| 1992 | 11.6 | 4.6 | 83.8 | 100.0 | 34,073 |
| 1993 | 11.8 | 5.2 | 83.0 | 100.0 | 33,915 |
| 1994 | 12.4 | 4.9 | 82.7 | 100.0 | 34,837 |
| 1995 | 14.6 | 2.7 | 82.6 | 100.0 | 36,787 |
| 1996 | 15.1 | 0.6 | 84.3 | 100.0 | 26,675 |
| **TOTAL** | **12.8** | **4.2** | **83.0** | **100.0** | **249,025** |
| | | | | | |
| **NON-BLACK** | | | | | |
| 1990 | 12.6 | 4.6 | 82.7 | 100.0 | 199,205 |
| 1991 | 12.4 | 4.5 | 83.1 | 100.0 | 189,267 |
| 1992 | 13.1 | 4.6 | 82.3 | 100.0 | 173,271 |
| 1993 | 13.4 | 4.9 | 81.7 | 100.0 | 171,266 |
| 1994 | 13.8 | 4.4 | 81.8 | 100.0 | 155,266 |
| 1995 | 15.7 | 2.3 | 82.0 | 100.0 | 158,935 |
| 1996 | 15.2 | 0.6 | 84.2 | 100.0 | 114,905 |
| **TOTAL** | **13.6** | **3.9** | **82.5** | **100.0** | **1,162,115** |

Source: Derived from a special database provided by the Defense Manpower Data Center. Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

and Non-Blacks had dropped from the DEP in the past and later entered active duty (DROP/ACT).

Table 4.9 shows that the DEP attrition rates for the Marine Corps have tended to be the highest of all the services; and the DEP attrition rates for the Air Force have tended to be the

Table 4.9 Percentage Distribution of all DEP Participants by Year of DEP Entry, DEP Status, and Service, FYs 1990-1996

| YEAR OF DEP ENTRY BY SERVICE | DEP/DROP | DROP/ACT | DEP/ENL | TOTAL DEP ACCESSIONS PERCENT | NUMBER |
|---|---|---|---|---|---|
| **ARMY** | | | | | |
| 1990 | 12.8 | 4.4 | 82.8 | 100.0 | 90,699 |
| 1991 | 10.5 | 3.6 | 85.9 | 100.0 | 77,715 |
| 1992 | 10.9 | 3.4 | 85.7 | 100.0 | 66,320 |
| 1993 | 12.5 | 4.5 | 83.0 | 100.0 | 71,179 |
| 1994 | 13.9 | 4.5 | 81.6 | 100.0 | 62,364 |
| 1995 | 16.8 | 2.3 | 80.9 | 100.0 | 68,176 |
| 1996 | 16.9 | 0.4 | 82.7 | 100.0 | 50,056 |
| **TOTAL** | **13.3** | **3.5** | **83.3** | **100.0** | **486,509** |
| | | | | | |
| **NAVY** | | | | | |
| 1990 | 12.5 | 4.2 | 83.3 | 100.0 | 83,960 |
| 1991 | 12.8 | 4.4 | 82.8 | 100.0 | 72,924 |
| 1992 | 15.4 | 5.3 | 79.3 | 100.0 | 68,943 |
| 1993 | 13.4 | 4.5 | 82.1 | 100.0 | 59,942 |
| 1994 | 12.3 | 4.1 | 83.6 | 100.0 | 56,385 |
| 1995 | 14.7 | 2.6 | 82.7 | 100.0 | 55,436 |
| 1996 | 13.7 | 0.4 | 85.9 | 100.0 | 38,513 |
| **TOTAL** | **13.5** | **3.9** | **82.6** | **100.0** | **436,103** |
| | | | | | |
| **MARINE CORPS** | | | | | |
| 1990 | 13.7 | 5.7 | 80.6 | 100.0 | 41,056 |
| 1991 | 16.7 | 6.3 | 77.0 | 100.0 | 38,374 |
| 1992 | 14.8 | 6.1 | 79.1 | 100.0 | 35,561 |
| 1993 | 15.1 | 6.0 | 78.8 | 100.0 | 39,223 |
| 1994 | 16.2 | 5.5 | 78.3 | 100.0 | 39,250 |
| 1995 | 17.7 | 2.7 | 79.6 | 100.0 | 39,005 |
| 1996 | 18.5 | 1.3 | 80.2 | 100.0 | 28,299 |
| **TOTAL** | **16.0** | **4.9** | **79.1** | **100.0** | **260,768** |
| | | | | | |
| **AIR FORCE** | | | | | |
| 1990 | 11.1 | 5.9 | 83.0 | 100.0 | 32,225 |
| 1991 | 10.7 | 5.1 | 84.2 | 100.0 | 34,257 |
| 1992 | 9.6 | 4.3 | 86.2 | 100.0 | 36,520 |
| 1993 | 11.5 | 5.5 | 83.0 | 100.0 | 34,837 |
| 1994 | 11.7 | 4.0 | 84.3 | 100.0 | 32,104 |
| 1995 | 11.3 | 2.1 | 86.6 | 100.0 | 33,105 |
| 1996 | 10.2 | 0.6 | 89.2 | 100.0 | 24,712 |
| **TOTAL** | **10.9** | **4.1** | **85.1** | **100.0** | **227,760** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

lowest. In fact, the overall attrition rate for the Marine Corps (16.0 percent) over the 1990-1996 period is about 5 percentage points higher than the overall rate for the Air Force (10.9

percent). At the same time, the overall rates of attrition for the Army (13.3 percent) and the Navy (13.5 percent) are nearly the same.

## 5. Marital Status

Table 4.10 shows the marital status of all DEP participants by gender according to the recruits' DEP status. Recruits, whether men or women, who were single at the time of entry into the DEP were generally more likely to be a DEP loss than those who were divorced or married. Additionally, married men (7.7

Table 4.10 Percentage Distribution of all DEP Participants by Marital Status, DEP Status, and Gender, FYs 1990-1996

| MARITAL STATUS BY GENDER | DEP/DROP | DROP/ACT | DEP/ENL | TOTAL DEP ACCESSIONS | |
|---|---|---|---|---|---|
| | | | | PERCENT | NUMBER |
| **MEN** | | | | | |
| Divorced | 11.3 | 3.3 | 85.4 | 100.0 | 9,408 |
| Married | 7.7 | 3.7 | 88.5 | 100.0 | 90,983 |
| Single | 12.6 | 4.1 | 83.4 | 100.0 | 1,080,786 |
| **TOTAL** | **12.2** | **4.0** | **83.8** | **100.0** | **1,181,177** |
| | | | | | |
| **WOMEN** | | | | | |
| Divorced | 16.3 | 4.0 | 79.7 | 100.0 | 5,523 |
| Married | 15.9 | 4.0 | 80.1 | 100.0 | 26,602 |
| Single | 20.6 | 3.5 | 75.9 | 100.0 | 197,838 |
| **TOTAL** | **19.9** | **3.6** | **76.4** | **100.0** | **229,963** |
| | | | | | |
| **ALL** | | | | | |
| Divorced | 13.1 | 3.6 | 83.3 | 100.0 | 14,931 |
| Married | 9.6 | 3.8 | 86.6 | 100.0 | 117,585 |
| Single | 13.8 | 4.0 | 82.2 | 100.0 | 1,278,624 |
| **TOTAL** | **13.5** | **4.0** | **82.6** | **100.0** | **1,411,140** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

percent) tended to have a lower DEP loss rate than did their female counterparts (15.9 percent).

In Table 4.11, the data show that Blacks and Non-Blacks who were divorced had the same rate of DEP attrition at 13.1

percent. Married Blacks (10.3 percent), however, had a slightly higher likelihood of DEP attrition than did married Non-Blacks (9.5 percent). At the same time, Non-Blacks, regardless of marital status, are consistently more likely to have dropped out of the DEP and later enlist (DROP/ACT), but only by a relatively small margin.

Table 4.11 Percentage Distribution of All DEP Participants
by Marital Status, DEP Status, and Race, FYs 1990-1996

| MARITAL STATUS BY RACE | DEP/DROP | DROP/ACT | DEP/ENL | TOTAL DEP ACCESSIONS | |
|---|---|---|---|---|---|
| | | | | PERCENT | NUMBER |
| **BLACK** | | | | | |
| Divorced | 13.1 | 3.7 | 83.2 | 100.0 | 1,441 |
| Married | 10.3 | 4.2 | 85.6 | 100.0 | 17,069 |
| Single | 13.0 | 4.2 | 82.8 | 100.0 | 230,515 |
| **TOTAL** | **12.8** | **4.2** | **83.0** | **100.0** | **249,025** |
| | | | | | |
| **NON-BLACK** | | | | | |
| Divorced | 13.1 | 3.6 | 83.3 | 100.0 | 13,490 |
| Married | 9.5 | 3.7 | 86.8 | 100.0 | 100,516 |
| Single | 14.0 | 3.9 | 82.1 | 100.0 | 1,048,109 |
| **TOTAL** | **13.6** | **3.9** | **82.5** | **100.0** | **1,162,115** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

Table 4.12 shows the marital status of all DEP participants for each service according to the recruits' DEP status. As expected, married seniors were more likely (by at least 3 percentage points) to remain in their respective Service. Married seniors in the Marine Corps (6 percentage points below the average for their Service) were the most likely to stay in the DEP. Seniors who were either single or divorced had attrition rates that were somewhat above the average for all the Services. Additionally, there was not much difference in the attrition rates for seniors who had dropped out of the DEP and

later enlisted (DROP/ACT), except for the Navy and the Marine Corps. For the Navy, married seniors (4.7 percent) in this category were more likely to attrite by about 1 percentage point. Divorced persons in the Marine Corps (3.3 percent) were less likely to drop out of the DEP, but married seniors had a greater probability of attrition (6.0 percent).

Table 4.12 Percentage Distribution of All DEP Participants
by Marital Status, DEP Status, and Service, FYs 1990-1996

| MARITAL STATUS BY SERVICE | DEP/DROP | DROP/ACT | DEP/ENL | TOTAL DEP ACCESSION | |
|---|---|---|---|---|---|
| | | | | PERCENT | NUMBER |
| **ARMY** | | | | | |
| Divorced | 13.9 | 3.4 | 82.7 | 100.0 | 6,571 |
| Married | 10.0 | 3.0 | 87.0 | 100.0 | 60,196 |
| Single | 13.7 | 3.5 | 82.8 | 100.0 | 419,742 |
| **TOTAL** | **13.3** | **3.5** | **83.3** | **100.0** | **486,509** |
| | | | | | |
| **NAVY** | | | | | |
| Divorced | 12.5 | 3.6 | 83.9 | 100.0 | 5,294 |
| Married | 10.2 | 4.7 | 85.2 | 100.0 | 23,497 |
| Single | 13.7 | 3.9 | 82.4 | 100.0 | 407,312 |
| **TOTAL** | **13.5** | **3.9** | **82.6** | **100.0** | **436,103** |
| | | | | | |
| **MARINE CORPS** | | | | | |
| Divorced | 10.9 | 3.3 | 85.8 | 100.0 | 1,442 |
| Married | 10.7 | 6.0 | 83.3 | 100.0 | 9,307 |
| Single | 16.2 | 4.9 | 78.9 | 100.0 | 250,019 |
| **TOTAL** | **16.0** | **4.9** | **79.1** | **100.0** | **260,768** |
| | | | | | |
| **AIR FORCE** | | | | | |
| Divorced | 14.0 | 4.6 | 81.4 | 100.0 | 1,624 |
| Married | 7.6 | 4.0 | 88.4 | 100.0 | 24,585 |
| Single | 11.3 | 4.1 | 84.7 | 100.0 | 201,551 |
| **TOTAL** | **10.9** | **4.1** | **85.1** | **100.0** | **227,760** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

## B.    HIGH SCHOOL SENIORS

This section looks at the DEP status, including attrition rates, of high school seniors by their year of entry into the DEP, race, military service, and gender. Again, DEP status includes recruits who dropped out of the DEP and never entered

active duty (DEP DROP), those who dropped out of the DEP but later entered active duty (DROP/ACT), and those who entered active duty from the DEP (DEP/ENL).

### 1. DEP Status

Table 4.13 shows high school seniors who participated in the DEP by DEP status, military service, and gender. As seen here, the percentage of female seniors who drop out of the DEP are noticeably higher than those of their male counterparts in each of the Services. For example, in the Army and Marine Corps, nearly one out of every two female seniors dropped out of the DEP; and in the Navy and Air Force, the dropout rate for female seniors is about one in three. This compares with rates for men in the Army, Marine Corps, and Air Force that are 17

Table 4.13 Percentage Distribution of High School Senior DEP Participants by DEP Status, Service, and Gender, FYs 1990-1996

| DEP STATUS BY GENDER | MILITARY SERVICE | | | | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|---|---|
| | ARMY | NAVY | USMC | USAF | PERCENT | NUMBER |
| **MEN** | | | | | | |
| DEP/DROP | 30.1 | 23.1 | 29.0 | 17.6 | 26.1 | 69,719 |
| DEP/ACT | 2.6 | 2.6 | 2.8 | 4.8 | 2.9 | 7,644 |
| DEP/ENL | 67.3 | 74.3 | 68.2 | 77.5 | 71.0 | 189,792 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **267,155** |
| | | | | | | |
| **WOMEN** | | | | | | |
| DEP/DROP | 47.0 | 36.8 | 46.3 | 34.6 | 40.6 | 16,552 |
| DEP/ACT | 1.4 | 1.8 | 1.9 | 3.3 | 2.0 | 830 |
| DEP/ENL | 51.6 | 61.4 | 51.8 | 62.0 | 57.4 | 23,394 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **40,776** |
| | | | | | | |
| **ALL** | | | | | | |
| DEP/DROP | 32.7 | 25.0 | 30.0 | 21.9 | 28.0 | 86,271 |
| DEP/ACT | 2.4 | 2.5 | 2.7 | 4.5 | 2.8 | 8,474 |
| DEP/ENL | 64.9 | 72.6 | 67.2 | 73.6 | 69.2 | 213,186 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **307,931** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

percentage points lower; and rates in the Navy that are about 14 percentage points lower. Overall, DEP dropout rates were highest in the Army (32.7 percent) and lowest in the Air Force (21.9 percent).

As seen in Table 4.14, Blacks were slightly less likely than Non-Blacks to drop out of the DEP in the Army and the Marine Corps. At the same time, Black high school seniors were almost 6 percentage points less likely to drop out of the DEP in

Table 4.14 Percentage Distribution of High School Senior DEP Participants By DEP Status, Service, and Race, FYs 1990-1996

| DEP STATUS BY RACE | MILITARY SERVICE | | | | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|---|---|
| | ARMY | NAVY | USMC | USAF | PERCENT | NUMBER |
| **BLACK** | | | | | | |
| DEP/DROP | 32.2 | 26.0 | 29.6 | 17.0 | 27.8 | 13,487 |
| DEP/ACT | 2.7 | 2.9 | 2.7 | 3.4 | 2.8 | 1,375 |
| DEP/ENL | 65.1 | 71.1 | 67.7 | 79.5 | 69.3 | 33,606 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **48,468** |
| | | | | | | |
| **NON-BLACK** | | | | | | |
| DEP/DROP | 32.8 | 24.7 | 30.1 | 22.6 | 28.1 | 72,784 |
| DEP/ACT | 2.3 | 2.4 | 2.7 | 4.6 | 2.7 | 7,099 |
| DEP/ENL | 64.8 | 72.9 | 67.2 | 72.8 | 69.2 | 179,580 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **259,463** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

the Air Force. The opposite relationship is true for the Navy—where Black high school seniors are slightly more likely than Non-Blacks to drop out of the DEP.

2. **Contracted Months in DEP**

Table 4.15 shows the percentage distribution of high school seniors by their contracted months in the DEP, service, and gender. As seen here, the Air Force tended to have most seniors

sign contracts for 9 to 12 months. This is a much longer period for high school seniors than in the other services. Additionally, the proportion of women who signed a DEP contract for 10 to 13 months in the Army is about 9 percentage points lower than the proportion of men in the Army who signed up for this length of time. Additionally, male seniors were less

Table 4.15 Percentage Distribution of High School Senior DEP Participants  by Contracted Months, Service, and Gender, FYs 1990-1996

| CONTRACTED MONTHS IN DEP BY GENDER | MILITARY SERVICE | | | | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|---|---|
| | ARMY | NAVY | USMC | USAF | PERCENT | NUMBER |
| **MEN** | | | | | | |
| 0-3 | 9.1 | 7.0 | 4.3 | 2.0 | 6.2 | 16,292 |
| 4-6 | 25.3 | 20.4 | 12.7 | 3.6 | 17.6 | 46,287 |
| 7-9 | 31.5 | 30.2 | 28.7 | 3.8 | 27.4 | 72,167 |
| 10-13 | 34.1 | 42.4 | 54.3 | 90.6 | 48.8 | 128,653 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **263,399** |
| **WOMEN** | | | | | | |
| 0-3 | 8.3 | 7.4 | 5.5 | 1.3 | 6.0 | 2,392 |
| 4-6 | 34.1 | 25.8 | 16.2 | 3.1 | 21.9 | 8,671 |
| 7-9 | 32.3 | 31.8 | 36.4 | 2.9 | 26.0 | 10,296 |
| 10-13 | 25.3 | 35.0 | 41.9 | 92.7 | 46.1 | 18,251 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **39,610** |
| **ALL** | | | | | | |
| 0-3 | 9.0 | 7.0 | 4.4 | 1.8 | 6.2 | 18,684 |
| 4-6 | 26.6 | 21.1 | 12.9 | 3.5 | 18.1 | 54,958 |
| 7-9 | 31.6 | 30.4 | 29.1 | 3.6 | 27.2 | 82,463 |
| 10-13 | 32.8 | 41.4 | 53.5 | 91.1 | 48.5 | 146,904 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **303,009** |

Source: Derived from a special database provided by the Defense Manpower Data Center.

likely than their female counterparts to sign a contract for 4 to 6 months within each of the services.

Table 4.16 shows that Blacks generally tended to have shorter contracted periods in the DEP than did Non-Blacks. Again, the Air Force has a much higher proportion of high school seniors who sign a DEP contract for 10 to 13 months, when compared with the other services; and this holds true regardless

of race.  Generally, Black seniors tended to sign up for shorter periods than do their Non-Black counterparts.  For example, within each service, proportionately more Blacks than Non-Blacks had DEP contracts in the 0-3 month range as well as in the 4-6 month range.  And, proportionately more Non-Blacks than Blacks can be found in the 10-13 month period within each of the services.

Table 4.16 Percentage Distribution of High School Senior DEP Participants By Contracted Months, Service, and Race, FYs 1990-1996

| CONTRACT MONTHS IN DEP BY RACE | MILITARY SERVICE | | | | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|---|---|
| | ARMY | NAVY | USMC | USAF | PERCENT | NUMBER |
| **BLACK** | | | | | | |
| 0-3 | 11.8 | 9.8 | 5.1 | 2.1 | 8.6 | 4,092 |
| 4-6 | 31.1 | 26.3 | 14.8 | 4.0 | 23.0 | 10,929 |
| 7-9 | 31.1 | 30.5 | 30.7 | 3.4 | 28.3 | 13,466 |
| 10-13 | 25.9 | 33.4 | 49.3 | 90.5 | 40.1 | 19,066 |
| **TOTAL** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **47,553** |
| | | | | | | |
| **NON-BLACK** | | | | | | |
| 0-3 | 8.4 | 6.4 | 4.3 | 1.8 | 5.7 | 14,592 |
| 4-6 | 25.7 | 20.0 | 12.6 | 3.4 | 17.2 | 44,029 |
| 7-9 | 31.7 | 30.4 | 28.9 | 3.6 | 27.0 | 68,997 |
| 10-13 | 34.2 | 43.1 | 54.2 | 91.2 | 50.0 | 127,838 |
| TOTAL | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 255,456 |

Source: Derived from a special database provided by the Defense Manpower Data Center.

## 3.  Year of DEP Entry

As previously noted (Table 4.13), the rate of DEP attrition for female seniors is noticeably higher than that for male seniors.  And, the dropout rate for female seniors is considerably higher than it is for women as a whole in the DEP (24.6 percent for all female DEPers, in Table 4.7, compared with 40.6 percent for female seniors).  Table 4.17 also shows that the variation in DEP attrition rates for female seniors is somewhat greater than it is for their male counterparts.  This

is especially true for women in FYs 1990, 1992, and 1996. Women

Table 4.17 Percentage Distribution of High School Senior DEP
Participants by Year of DEP Entry, DEP Status, and Gender,
FYs 1990-1996

| YEAR OF DEP ENTRY BY GENDER | DEP/DROP | DROP/ACT | DEP/ENL | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|---|
| | | | | PERCENT | NUMBER |
| **MEN** | | | | | |
| 1990 | 27.3 | 3.2 | 69.4 | 100.0 | 45,136 |
| 1991 | 25.5 | 3.3 | 71.2 | 100.0 | 37,795 |
| 1992 | 23.5 | 3.0 | 73.5 | 100.0 | 42,813 |
| 1993 | 25.0 | 3.4 | 71.6 | 100.0 | 42,166 |
| 1994 | 25.0 | 3.5 | 71.5 | 100.0 | 36,627 |
| 1995 | 27.9 | 2.0 | 70.1 | 100.0 | 37,920 |
| 1996 | 30.1 | 0.8 | 69.2 | 100.0 | 24,698 |
| **TOTAL** | **26.1** | **2.9** | **71.0** | **100.0** | **267,155** |
| | | | | | |
| **WOMEN** | | | | | |
| 1990 | 44.0 | 2.3 | 53.7 | 100.0 | 4,901 |
| 1991 | 40.3 | 2.8 | 56.9 | 100.0 | 3,375 |
| 1992 | 36.1 | 2.1 | 61.8 | 100.0 | 4,989 |
| 1993 | 41.3 | 2.3 | 56.4 | 100.0 | 6,576 |
| 1994 | 38.1 | 3.1 | 58.8 | 100.0 | 6,543 |
| 1995 | 40.1 | 1.6 | 58.3 | 100.0 | 8,401 |
| 1996 | 44.3 | 0.4 | 55.2 | 100.0 | 5,991 |
| **TOTAL** | **40.6** | **2.0** | **57.4** | **100.0** | **40,776** |
| | | | | | |
| **ALL** | | | | | |
| 1990 | 29.0 | 3.1 | 67.9 | 100.0 | 50,037 |
| 1991 | 26.7 | 3.2 | 70.1 | 100.0 | 41,170 |
| 1992 | 24.8 | 2.9 | 72.3 | 100.0 | 47,802 |
| 1993 | 27.2 | 3.3 | 69.5 | 100.0 | 48,742 |
| 1994 | 27.0 | 3.4 | 69.6 | 100.0 | 43,170 |
| 1995 | 30.1 | 1.9 | 68.0 | 100.0 | 46,321 |
| 1996 | 32.9 | 0.7 | 66.5 | 100.0 | 30,689 |
| **TOTAL** | **28.0** | **2.8** | **69.2** | **100.0** | **307,931** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active
duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered
active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

were about 4 percentage points more likely to drop out of the

DEP in FYs 1990 and 1996, and 4 percentage points less likely

than the average in FY 1992.

As seen in Table 4.18, the DEP attrition rates for Blacks

and Non-Blacks are very similar from FYs 1990 through 1996. In

the early 1990s, there was a declining trend in the percentage

of DEP dropouts, regardless of race; but after FY 1993 the DEP

dropout rates tended to rise. These differences in DEP dropout rates are greatest for Non-Blacks between 1994 (24.7 percent) and 1996 (33.6 percent)—an increase of nearly 9 percentage points. At the same time, it should be noted that there is a

Table 4.18 Percentage Distribution of High School Senior DEP Participants by Year of DEP Entry, DEP Status, and Race, FYs 1990-1996

| YEAR OF DEP ENTRY BY RACE | DEP/DROP | DROP/ACT | DEP/ENL | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|---|
| | | | | PERCENT | NUMBER |
| **BLACK** | | | | | |
| 1990 | 31.4 | 3.5 | 65.1 | 100.0 | 8,691 |
| 1991 | 29.2 | 3.5 | 67.3 | 100.0 | 5,744 |
| 1992 | 25.5 | 3.0 | 71.5 | 100.0 | 6,474 |
| 1993 | 26.0 | 3.4 | 70.5 | 100.0 | 7,156 |
| 1994 | 24.4 | 3.2 | 72.4 | 100.0 | 6,634 |
| 1995 | 27.9 | 2.2 | 69.9 | 100.0 | 7,982 |
| 1996 | 29.7 | 0.7 | 69.6 | 100.0 | 5,787 |
| **TOTAL** | **27.8** | **2.8** | **69.3** | **100.0** | **48,468** |
| | | | | | |
| **NON-BLACK** | | | | | |
| 1990 | 28.5 | 3.1 | 68.5 | 100.0 | 41,346 |
| 1991 | 26.3 | 3.2 | 70.5 | 100.0 | 35,426 |
| 1992 | 24.7 | 2.9 | 72.5 | 100.0 | 41,328 |
| 1993 | 27.4 | 3.3 | 69.3 | 100.0 | 41,586 |
| 1994 | 27.4 | 3.5 | 69.1 | 100.0 | 36,536 |
| 1995 | 30.5 | 1.9 | 67.6 | 100.0 | 38,339 |
| 1996 | 33.6 | 0.7 | 65.7 | 100.0 | 24,902 |
| **TOTAL** | **28.1** | **2.7** | **69.2** | **100.0** | **259,463** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

modest decline over the years in the percentage of recruits who dropped out of the DEP but later entered active duty.

As seen in Table 4.19, overall, DEP attrition rates appear to have declined in the early 1990s and then increased in more recent years. The highest rates for the period are found in 1996 for the Army (37.6 percent) and Marine Corps (36.7 percent). It can also be seen in Table 4.19 that the greatest disparities in DEP attrition rates from one year to the next tend to occur in the Army and in the Marine Corps. Conversely,

DEP attrition rates tend to vary little from year to year in the Navy and in the Air Force—with the Air Force having a generally lower rate of DEP attrition than in the Navy.

Table 4.19 Percentage Distribution of High School Senior DEP Participants by Year of DEP Entry, DEP Status, and Service, FYs 1990-1996

| YEAR OF DEP ENTRY BY SERVICE | DEP/DROP | DROP/ACT | DEP/ENL | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|---|
| | | | | PERCENT | NUMBER |
| **ARMY** | | | | | |
| 1990 | 34.8 | 3.4 | 61.8 | 100.0 | 14,068 |
| 1991 | 30.3 | 2.8 | 66.9 | 100.0 | 9,628 |
| 1992 | 27.9 | 2.0 | 70.1 | 100.0 | 9,104 |
| 1993 | 31.0 | 2.9 | 66.1 | 100.0 | 13,186 |
| 1994 | 32.1 | 3.1 | 64.8 | 100.0 | 9,578 |
| 1995 | 34.3 | 1.6 | 64.1 | 100.0 | 13,822 |
| 1996 | 37.6 | 0.4 | 62.0 | 100.0 | 9,176 |
| **TOTAL** | **32.7** | **2.4** | **64.9** | **100.0** | **78,562** |
| | | | | | |
| **NAVY** | | | | | |
| 1990 | 26.1 | 2.7 | 71.2 | 100.0 | 18,994 |
| 1991 | 23.2 | 2.7 | 74.1 | 100.0 | 15,840 |
| 1992 | 23.8 | 2.9 | 73.3 | 100.0 | 19,875 |
| 1993 | 25.0 | 2.6 | 72.4 | 100.0 | 16,172 |
| 1994 | 23.2 | 3.1 | 73.7 | 100.0 | 13,725 |
| 1995 | 27.2 | 1.7 | 71.1 | 100.0 | 13,521 |
| 1996 | 27.7 | 0.3 | 71.9 | 100.0 | 8,460 |
| **TOTAL** | **25.0** | **2.5** | **72.6** | **100.0** | **106,587** |
| | | | | | |
| **MARINE CORPS** | | | | | |
| 1990 | 29.3 | 2.7 | 68.0 | 100.0 | 11,955 |
| 1991 | 30.5 | 3.0 | 66.5 | 100.0 | 11,223 |
| 1992 | 26.0 | 2.9 | 71.1 | 100.0 | 13,029 |
| 1993 | 27.8 | 3.2 | 69.0 | 100.0 | 13,615 |
| 1994 | 29.3 | 3.6 | 67.1 | 100.0 | 14,330 |
| 1995 | 32.7 | 1.9 | 65.3 | 100.0 | 13,427 |
| 1996 | 36.7 | 1.1 | 62.2 | 100.0 | 9,145 |
| **TOTAL** | **30.0** | **2.7** | **67.2** | **100.0** | **86,724** |
| | | | | | |
| **AIR FORCE** | | | | | |
| 1990 | 22.8 | 5.1 | 72.0 | 100.0 | 5,020 |
| 1991 | 22.2 | 6.6 | 71.3 | 100.0 | 4,479 |
| 1992 | 20.6 | 4.0 | 75.4 | 100.0 | 5,794 |
| 1993 | 23.2 | 6.3 | 70.5 | 100.0 | 5,769 |
| 1994 | 21.4 | 4.2 | 74.3 | 100.0 | 5,537 |
| 1995 | 20.2 | 3.3 | 76.5 | 100.0 | 5,551 |
| 1996 | 23.7 | 1.2 | 75.2 | 100.0 | 3,908 |
| **TOTAL** | **21.9** | **4.5** | **73.6** | **100.0** | **36,058** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

## 4. Marital Status

Table 4.20 shows that the DEP attrition rates for female seniors are consistently higher than those of men for all marital status categories. These differences are greatest in

the divorced and married categories, where the rates for female seniors exceed those of their male counterparts by about 16 percentage points.

Table 4.20 Percentage Distribution of High School Senior DEP
Participants by Marital Status, DEP Status, and Gender, FYs 1990-1996

| MARITAL STATUS BY GENDER | DEP/DROP | DROP/ACT | DEP/ENL | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|---|
| | | | | PERCENT | NUMBER |
| **MEN** | | | | | |
| Divorced | 22.8 | 8.9 | 68.4 | 100.0 | 79 |
| Married | 17.7 | 5.3 | 77.0 | 100.0 | 2,474 |
| Single | 26.2 | 2.8 | 71.0 | 100.0 | 264,602 |
| **TOTAL** | **26.1** | **2.9** | **71.0** | **100.0** | **267,155** |
| | | | | | |
| **WOMEN** | | | | | |
| Divorced | 43.2 | 4.5 | 52.3 | 100.0 | 44 |
| Married | 36.9 | 3.0 | 60.1 | 100.0 | 469 |
| Single | 40.6 | 2.0 | 57.3 | 100.0 | 40,263 |
| **TOTAL** | **40.6** | **2.0** | **57.4** | **100.0** | **40,776** |
| | | | | | |
| **ALL** | | | | | |
| Divorced | 30.1 | 7.3 | 62.6 | 100.0 | 123 |
| Married | 20.8 | 4.9 | 74.3 | 100.0 | 2,943 |
| Single | 28.1 | 2.7 | 69.2 | 100.0 | 304,865 |
| **TOTAL** | **28.0** | **2.8** | **69.2** | **100.0** | **307,931** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

Table 4.21 shows the marital status of high school senior DEP participants by service and DEP status. Seniors who were divorced at the time of entry into the DEP were generally more likely to drop out of the DEP than those who were married or single. This relationship holds for all Services except the Marine Corps, where DEPers who are single had the highest attrition rate. At the same time, married high school seniors (though very few in numbers, as with divorced seniors) had the lowest attrition rate in all services.

Table 4.21 Percentage Distribution of High School Senior DEP
Participants by Marital Status, DEP Status, and Service, FYs 1990-1996

| MARITAL STATUS BY SERVICE | DEP/DROP | DROP/ACT | DEP/ENL | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|---|
| | | | | PERCENT | NUMBER |
| **ARMY** | | | | | |
| Divorced | 41.0 | 7.7 | 51.3 | 100.0 | 39 |
| Married | 28.1 | 4.1 | 67.8 | 100.0 | 949 |
| Single | 32.8 | 2.4 | 64.8 | 100.0 | 77,574 |
| **TOTAL** | **32.7** | **2.4** | **64.9** | **100.0** | **78,562** |
| | | | | | |
| **NAVY** | | | | | |
| Divorced | 25.0 | 6.8 | 68.2 | 100.0 | 44 |
| Married | 17.7 | 6.6 | 75.7 | 100.0 | 757 |
| Single | 25.0 | 2.4 | 72.6 | 100.0 | 105,786 |
| **TOTAL** | **25.0** | **2.5** | **72.6** | **100.0** | **106,587** |
| | | | | | |
| **MARINE CORPS** | | | | | |
| Divorced | 18.2 | 9.1 | 72.7 | 100.0 | 22 |
| Married | 20.4 | 4.7 | 75.0 | 100.0 | 535 |
| Single | 30.1 | 2.7 | 67.2 | 100.0 | 86,167 |
| **TOTAL** | **30.0** | **2.7** | **67.2** | **100.0** | **86,724** |
| | | | | | |
| **AIR FORCE** | | | | | |
| Divorced | 33.3 | 5.6 | 61.1 | 100.0 | 18 |
| Married | 14.4 | 4.3 | 81.3 | 100.0 | 702 |
| Single | 22.1 | 4.5 | 73.5 | 100.0 | 35,338 |
| **TOTAL** | **21.9** | **4.5** | **73.6** | **100.0** | **36,058** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

As seen in Table 4.22, the total number of married or divorced high school seniors is quite small (e.g., just 12 married recruits out of 48,468 Black DEPers). Nevertheless, it is worth noting that the proportion of DEP dropouts who are single is nearly the same for Blacks (27.9 percent) and Non-Blacks (28.1 percent).

Table 4.22 Percentage Distribution of High School Senior DEP Participants
by Marital Status, DEP Status, and Race, FYs 1990-1996

| MARITAL STATUS BY RACE | DEP/DROP | DROP/ACT | DEP/ENL | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|---|
| | | | | PERCENT | NUMBER |
| **BLACK** | | | | | |
| Divorced | 25.0 | 8.3 | 66.7 | 100.0 | 12 |
| Married | 19.1 | 5.0 | 75.9 | 100.0 | 241 |
| Single | 27.9 | 2.8 | 69.3 | 100.0 | 48,215 |
| **TOTAL** | **27.8** | **2.8** | **69.3** | **100.0** | **48,468** |
| **NON-BLACK** | | | | | |
| Divorced | 30.6 | 7.2 | 62.2 | 100.0 | 111 |
| Married | 20.9 | 4.9 | 74.2 | 100.0 | 2,702 |
| Single | 28.1 | 2.7 | 69.2 | 100.0 | 256,650 |
| **TOTAL** | **28.1** | **2.7** | **69.2** | **100.0** | **259,463** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

## 5. DEP Waiver

The types of waivers individual recruits receive are depicted in Tables 4.23 through 4.25. Again, waivers are authorizations for enlistment that are granted to DEP participants when they do not meet certain standards for acceptance into the military. For example, waivers can be given for failure to meet specific "moral" criteria, such as having numerous traffic tickets or an arrest record, or having used an illegal drug. There were 4,922 records in the data set for which there was no information available on whether a recruit received a DEP waiver. These observations are treated as missing cases in Tables 4.23 through 4.25.

The most meaningful way to look at the data in Tables 4.23 through 4.25 is to compare the percentages in the column of "DEP DROPS," by demographic or service category, with the totals for

the demographic or service categories. In Table 4.23, for example, it can be seen that the total DEP dropout rate for men is 25.2 percent. Among the various types of waivers, it can also be seen that DEP dropout rates were higher than the total rate for men almost across the board (with the lone exception

Table 4.23 Percentage Distribution of High School Senior DEP Participants by DEP Waiver, DEP Status, and Gender, FYs 1990-1996

| DEP WAIVER BY GENDER | DEP/DROP | DROP/ACT | DEP/ENL | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
| --- | --- | --- | --- | --- | --- |
| | | | | PERCENT | NUMBER |
| **MEN** | | | | | |
| AGE | 30.4 | 2.8 | 66.9 | 100.0 | 3,306 |
| NUMBER OF DEPENDENTS | 30.9 | 2.9 | 66.2 | 100.0 | 2,747 |
| MENTAL QUALIFICATIONS | 33.5 | 5.5 | 61.0 | 100.0 | 454 |
| MORAL QUALIFICATIONS | 28.3 | 3.9 | 67.8 | 100.0 | 10,161 |
| HARDSHIP/DEPENDENCY | 29.1 | 8.0 | 62.9 | 100.0 | 313 |
| LOST TIME | 31.4 | 3.8 | 64.8 | 100.0 | 1,303 |
| PHYS QUAL - EPTS | 31.7 | 2.4 | 65.9 | 100.0 | 23,960 |
| PHYS QUAL-NON-EPTS | 35.8 | 2.7 | 61.5 | 100.0 | 603 |
| OTHER | 24.9 | 19.6 | 55.5 | 100.0 | 3,304 |
| NOT APPLICABLE | 24.2 | 2.5 | 73.3 | 100.0 | 217,233 |
| **TOTAL** | **25.2** | **2.8** | **71.9** | **100.0** | **263,401** |
| | | | | | |
| **WOMEN** | | | | | |
| AGE | 57.8 | 0.9 | 41.4 | 100.0 | 116 |
| NUMER OF DEPENDENTS | 57.7 | 0.0 | 42.3 | 100.0 | 97 |
| MENTAL QUALIFICATIONS | 33.3 | 0.0 | 66.7 | 100.0 | 24 |
| MORAL QUALIFICATIONS | 39.2 | 3.9 | 56.8 | 100.0 | 586 |
| PHYS QUAL - EPTS | 50.5 | 1.8 | 47.7 | 100.0 | 1,484 |
| PHYS QUAL – NON-EPTS | 58.1 | 4.7 | 37.2 | 100.0 | 43 |
| OTHER | 34.9 | 11.1 | 54.1 | 100.0 | 479 |
| NOT APPLICABLE | 38.5 | 1.9 | 59.6 | 100.0 | 36,757 |
| **TOTAL** | **39.1** | **2.0** | **58.9** | **100.0** | **39,611** |
| | | | | | |
| **ALL** | | | | | |
| AGE | 31.3 | 2.7 | 66.0 | 100.0 | 3,422 |
| NUMBER OF DEPENDENTS | 31.8 | 2.8 | 65.4 | 100.0 | 2,844 |
| MENTAL QUALIFICATION | 33.5 | 5.2 | 61.3 | 100.0 | 478 |
| MORAL QUALIFICATION | 28.9 | 3.9 | 67.2 | 100.0 | 10,747 |
| HARDSHIP/DEPENDENCY | 29.1 | 8.4 | 62.5 | 100.0 | 320 |
| LOST TIME | 31.7 | 3.8 | 64.5 | 100.0 | 1,320 |
| PHYS QUAL - EPTS | 32.8 | 2.3 | 64.8 | 100.0 | 25,444 |
| PHYS QUAL – NON-EPTS | 37.3 | 2.8 | 59.9 | 100.0 | 646 |
| OTHER | 26.1 | 18.5 | 55.3 | 100.0 | 3,783 |
| NOT APPLICABLE | 26.2 | 2.4 | 71.3 | 100.0 | 253,990 |
| **TOTAL** | **27.1** | **2.7** | **70.2** | **100.0** | **303,012** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.
EPTS- existed prior to service; Non-EPTS- Did not exist prior to service.

being the waiver category of "other"). The same relationship holds for female seniors, with the added exception of waivers for mental qualifications, where the dropout rate is 5.7 percentage points lower than the dropout rate for all women. Table 4.23 further shows that the most common waivers were for physical qualifications that did not exist before the recruit joined the DEP and for moral qualifications. The latter category, moral qualifications, was a much more frequent cause for waivers among male seniors than among their female counterparts.

As seen in Table 4.24, based on a dropout rate of 26.7 percent for all Black seniors, Black DEPers who received waivers for mental qualification and hardship/dependency were less likely to drop out of the program. At the same time, Black seniors were more likely to drop out of the DEP when they received waivers for number of dependents, age, and for physical qualifications that existed before coming into the service. Additionally, Non-Black seniors were considerably more likely to drop out if they received waivers for physical qualifications that did not exist prior to entering the service, or for mental qualifications.

Table 4.24 Percentage Distribution of High School Senior DEP
Participants by DEP Waiver, DEP Status, and Race, FYs 1990-1996

| DEP WAIVER BY RACE | DEP/DROP | DROP/ACT | DEP/ENL | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
| --- | --- | --- | --- | --- | --- |
| | | | | PERCENT | NUMBER |
| **BLACK** | | | | | |
| AGE | 33.2 | 3.2 | 63.6 | 100.0 | 250 |
| NUMBER OF DEPENDENTS | 34.4 | 1.1 | 64.5 | 100.0 | 276 |
| MENTAL QUALIFICATION | 20.0 | 2.5 | 77.5 | 100.0 | 40 |
| MORAL QUALIFICATION | 26.9 | 5.2 | 67.9 | 100.0 | 1,288 |
| HARDSHIP/DEPENDENCY | 17.1 | 14.3 | 68.6 | 100.0 | 35 |
| LOST TIME | 26.3 | 7.0 | 66.7 | 100.0 | 114 |
| PHYS QUAL – EPTS | 32.3 | 2.4 | 65.3 | 100.0 | 2,554 |
| OTHER | 29.3 | 20.8 | 49.8 | 100.0 | 777 |
| NOT APPLICABLE | 26.3 | 2.4 | 71.4 | 100.0 | 42,198 |
| **TOTAL** | **26.7** | **2.8** | **70.5** | **100.0** | **47,552** |
| | | | | | |
| **NON-BLACK** | | | | | |
| AGE | 31.1 | 2.6 | 66.2 | 100.0 | 3,172 |
| NUMBER OF DEPENDENT | 31.5 | 3.0 | 65.5 | 100.0 | 2,568 |
| MENTAL QUALIFICATION | 34.7 | 5.5 | 59.8 | 100.0 | 438 |
| MORAL QUALIFICATION | 29.2 | 3.7 | 67.1 | 100.0 | 9,459 |
| HARDSHIP/DEPENDENCY | 30.5 | 7.7 | 61.8 | 100.0 | 285 |
| LOST TIME | 32.2 | 3.5 | 64.3 | 100.0 | 1,206 |
| PHYS QUAL – EPTS | 32.9 | 2.3 | 64.8 | 100.0 | 22,890 |
| PHYS QUAL – NON-EPTS | 37.6 | 2.6 | 59.8 | 100.0 | 627 |
| OTHER | 25.3 | 17.9 | 56.8 | 100.0 | 3,006 |
| NOT APPLICABLE | 26.2 | 2.5 | 71.3 | 100.0 | 211,792 |
| **TOTAL** | **27.1** | **2.7** | **70.2** | **100.0** | **255,460** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active
duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered
active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.
EPTS- existed prior to service; Non-EPTS- Did not exist prior to service.

Table 4.25 shows that, compared to the average attrition
rate of 31.3 percent for Army high school seniors, the highest
incidences of DEP attrition occurred when DEP waivers were given
for age (72.5 percent), number of dependents (49.6 percent), and
physical qualifications that did not exist prior to entering the
Army (45.5 percent). For the Navy, seniors who receive waivers
for hardship/dependency were least likely to attrite from the
DEP. The highest incidences for the Navy involved recruits who
received waivers for mental qualifications (38.4 percent) and
for physical qualifications that existed after entering the DEP

(33.4 percent).

With the exception of waivers for physical qualifications that existed before entering the DEP, the Marine Corps dropout rates by other waiver categories were all relatively close to the average for the Marine Corps as a whole. The same is true for the Air Force, except for the areas of mental qualifications, hardship/dependency, and lost time, where attrition rates were lower than the service-wide average.

## Table 4.25 Percentage Distribution of High School Senior DEP Participants by DEP Waiver, DEP Status, and Service, FYs 1990-1996

| DEP WAIVER BY SERVICE | DEP/DROP | DROP/ACT | DEP/ENL | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
| --- | --- | --- | --- | --- | --- |
| | | | | PERCENT | NUMBER |
| **ARMY** | | | | | |
| AGE | 72.5 | 9.8 | 17.6 | 100.0 | 102 |
| NUMBER OF DEPENDENTS | 49.6 | 1.5 | 48.9 | 100.0 | 137 |
| MENTAL QUALIFICATION | 34.7 | 8.3 | 56.9 | 100.0 | 72 |
| MORAL QUALIFICATION | 35.5 | 6.1 | 58.4 | 100.0 | 897 |
| HARDSHIP/DEPENDENCY | 40.0 | 10.0 | 50.0 | 100.0 | 10 |
| LOST TIME | 25.6 | 7.0 | 67.4 | 100.0 | 43 |
| PHYS QUAL - EPTS | 37.0 | 34.1 | 29.0 | 100.0 | 138 |
| PHYS QUAL – NON-EPTS | 45.5 | 18.2 | 36.4 | 100.0 | 11 |
| OTHER | 29.5 | 6.9 | 63.5 | 100.0 | 968 |
| NOT APPLICABLE | 31.1 | 2.2 | 66.6 | 100.0 | 74,206 |
| **TOTAL** | **31.3** | **2.4** | **66.3** | **100.0** | **76,586** |
| | | | | | |
| **NAVY** | | | | | |
| AGE | 28.6 | 5.8 | 65.6 | 100.0 | 154 |
| NUMBER OF DEPENDENTS | 27.2 | 4.7 | 68.1 | 100.0 | 364 |
| MENTAL QUALIFICATION | 38.4 | 7.1 | 54.5 | 100.0 | 112 |
| MORAL QUALIFICATION | 27.9 | 3.3 | 68.8 | 100.0 | 6,109 |
| HARDSHIP/DEPENDENCY | 18.2 | 4.5 | 77.3 | 100.0 | 22 |
| LOST TIME | 26.7 | 6.1 | 67.2 | 100.0 | 131 |
| PHYS QUAL - EPTS | 25.6 | 1.9 | 72.5 | 100.0 | 3,172 |
| PHYS QUAL – NON-EPTS | 33.4 | 3.5 | 63.1 | 100.0 | 398 |
| OTHER | 24.9 | 22.6 | 52.5 | 100.0 | 2,566 |
| NOT APPLICABLE | 23.9 | 1.8 | 74.2 | 100.0 | 92,524 |
| **TOTAL** | **24.3** | **2.5** | **73.2** | **100.0** | **105,552** |
| | | | | | |
| **MARINE CORPS** | | | | | |
| AGE | 30.2 | 2.3 | 67.5 | 100.0 | 3,116 |
| NUMBER OF DEPENDENTS | 31.9 | 2.5 | 65.7 | 100.0 | 2,248 |
| MENTAL QUALIFICATION | 33.9 | 3.0 | 63.1 | 100.0 | 236 |
| MORAL QUALIFICATION | 30.8 | 3.9 | 65.3 | 100.0 | 3,233 |
| HARDSHIP/DEPENDENCY | 31.7 | 8.3 | 59.9 | 100.0 | 252 |
| LOST TIME | 32.8 | 3.5 | 63.7 | 100.0 | 1,124 |
| PHYS QUAL - EPTS | 33.8 | 2.1 | 64.0 | 100.0 | 22,108 |
| PHYS QUAL – NON-EPTS | 43.5 | 0.8 | 55.7 | 100.0 | 237 |
| OTHER | 26.6 | 21.3 | 52.1 | 100.0 | 188 |
| NOT APPLICABLE | 26.7 | 2.7 | 70.7 | 100.0 | 52,528 |
| **TOTAL** | **29.1** | **2.6** | **68.3** | **100.0** | **85,286** |
| | | | | | |
| **AIR FORCE** | | | | | |
| AGE | 22.0 | 2.0 | 76.0 | 100.0 | 50 |
| NUMBER OF DEPENDENTS | 22.1 | 6.3 | 71.6 | 100.0 | 95 |
| MENTAL QUALIFICATION | 20.7 | 6.9 | 72.4 | 100.0 | 58 |
| MORAL QUALIFICATION | 17.1 | 6.1 | 76.8 | 100.0 | 508 |
| HARDSHIP/DEPENDENCY | 13.9 | 11.1 | 75.0 | 100.0 | 36 |
| LOST TIME | 13.6 | . | 86.4 | 100.0 | 22 |
| PHYS QUAL – EPTS | 30.8 | 46.2 | 23.1 | 100.0 | 26 |
| OTHER | 23.0 | 21.3 | 55.7 | 100.0 | 61 |
| UNKNWON | 21.2 | 4.2 | 74.5 | 100.0 | 34,732 |
| **TOTAL** | **21.2** | **4.3** | **74.5** | **100.0** | **35,588** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
Note: DEP/DROP = Recruits who entered the DEP and dropped out before entering active duty; DEP/ACT = Recruits who dropped out of the DEP but later came back in and entered active duty; and DEP/ENL = Recruits who joined the DEP and entered active duty.

## 6. Discharge Code

This section examines the DEP attrition rate for high school seniors by discharge code, gender, race, and military service.

Tables 4.26a through 4.26c show the discharge code (reason for leaving the DEP) by Black and Non-Black racial groupings. For all high school seniors participating in the DEP (Table 4.26a), the highest probabilities of DEP attrition are found for pregnancy (29.9 percent) and pursuit of higher education (26.4). Non-Blacks are more likely to drop out of the DEP for failure to graduate and being disqualified at the option of the service. Among Black men, as seen in Table 4.26b, the most frequent reason for dropping out of the DEP was pursuit of higher education (24.8 percent), enlistment misunderstanding (20.6 percent), and positive drug test (20.9 percent). Non-Black men were more likely to be discharged for personal hardships (91.1 percent), and for medical qualifications (whether or not they existed before entering the DEP, at 90.7 percent and 90.0 percent). Black men also tended to be discharged from the DEP because of testing positive on the drug test (20.0 percent).

As seen in Table 4.26c, the most common discharge reasons for Black women were pursuit of higher education (33.2 percent) and pregnancy (30.0 percent). Non-Black women were also more likely to be discharged from the DEP for marriage or at the

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option of the service. Numerically, refusal to enlist and
failure to graduate were the two most common reasons for DEP
discharge.

Table 4.26a Percentage Distribution of High School Senior DEP
Participants by Discharge Code and Race, FYs 1990-1996

| DISCHARGE CODE BY RACE | BLACK | NON-BLACK | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|
| | | | PERCENT | NUMBER |
| MEDICAL DISQUAL – EPTS | 11.5 | 88.5 | 100.0 | 2,634 |
| MED DISQUAL NON-EPTS | 10.7 | 89.3 | 100.0 | 8,974 |
| PREGNANCY | 29.9 | 70.1 | 100.0 | 2,254 |
| DEATH | 15.2 | 84.8 | 100.0 | 369 |
| MORAL DISQUAL EPTS | 17.1 | 82.9 | 100.0 | 2,383 |
| MORAL DISQUAL NON-EPTS | 17.8 | 82.2 | 100.0 | 5,155 |
| APATHY/PERSONAL PROB. | 15.6 | 84.4 | 100.0 | 10,632 |
| REFUSED TO ENLIST | 12.8 | 87.2 | 100.0 | 20,838 |
| DID NOT REPORT | 15.8 | 84.2 | 100.0 | 2,051 |
| DEPENDENCY DISQUAL | 17.6 | 82.4 | 100.0 | 188 |
| PERSONAL HARDSHIP | 9.8 | 90.2 | 100.0 | 285 |
| FAILURE TO GRADUATE | 17.7 | 82.3 | 100.0 | 19,082 |
| PURSUIT OF HIGHER ED | 26.4 | 73.6 | 100.0 | 4,215 |
| RELIGIOUS TRAINING | 19.1 | 80.9 | 100.0 | 47 |
| ENLISTED IN OTHER SERV | 17.8 | 82.2 | 100.0 | 202 |
| RECRUITING ERROR | 16.8 | 83.2 | 100.0 | 173 |
| ENLIST. MISUNDERSTAND | 20.0 | 80.0 | 100.0 | 180 |
| DISQUAL FOR OPTION | 9.9 | 90.1 | 100.0 | 161 |
| TEMP DISQUAL FOR OPTION | 13.1 | 86.9 | 100.0 | 84 |
| OTHER REASON | 11.8 | 88.2 | 100.0 | 3,070 |
| TRANSFER TO IRR | 12.6 | 87.4 | 100.0 | 1,979 |
| DAT POSITIVE RESULTS | 20.8 | 79.2 | 100.0 | 1,143 |
| EXCEED TIME IN DEP | 18.0 | 82.0 | 100.0 | 827 |
| **TOTAL** | **15.7** | **84.3** | **100.0** | **86,987** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
EPTS- existed prior to service; Non-EPTS- Did not exist prior to service.

Table 4.26b Percentage Distribution of Male High School Senior DEP Participants by Discharge Code and Race, FYs 1990-1996

| DISCHARGE CODE BY RACE | BLACK | NON-BLACK | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|
| | | | PERCENT | NUMBER |
| MEDICAL DISQUAL -EPTS | 10.0 | 90.0 | 100.0 | 2,120 |
| MED DISQUAL NON-EPTS | 9.3 | 90.7 | 100.0 | 7,301 |
| DEATH | 15.3 | 84.7 | 100.0 | 346 |
| MORAL DISQUAL EPTS | 17.2 | 82.8 | 100.0 | 2,217 |
| MORAL DISQUAL NONEPTS | 17.7 | 82.3 | 100.0 | 4,932 |
| APATHY/PERSONAL PROB | 13.7 | 86.3 | 100.0 | 7,882 |
| REFUSED TO ENLIST | 12.1 | 87.9 | 100.0 | 16,338 |
| DID NOT REPORT | 15.2 | 84.8 | 100.0 | 1,690 |
| DEPENDENCY DISQUAL. | 14.7 | 85.3 | 100.0 | 143 |
| PERSONAL HARDSHIP | 8.9 | 91.1 | 100.0 | 235 |
| FAILURE TO GRADUATE | 17.7 | 82.3 | 100.0 | 17,476 |
| PURSUIT OF HIGHER ED | 24.8 | 75.2 | 100.0 | 3,413 |
| RELIGIOUS TRAINING | 15.9 | 84.1 | 100.0 | 44 |
| ENLISTED IN OTHER SER | 15.2 | 84.8 | 100.0 | 164 |
| RECRUITING ERROR | 14.7 | 85.3 | 100.0 | 143 |
| ENLIST MISUNDERSTAND | 20.6 | 79.4 | 100.0 | 155 |
| DISQUAL FOR OPTION | 10.8 | 89.2 | 100.0 | 130 |
| TEMP DISQUAL FOR OPTN | 9.5 | 90.5 | 100.0 | 63 |
| OTHER REASON | 11.1 | 88.9 | 100.0 | 2,542 |
| TRANSFER TO IRR | 12.2 | 87.8 | 100.0 | 1,817 |
| DAT POSITIVE RESULTS | 20.9 | 79.1 | 100.0 | 1,053 |
| EXCEED TIME IN DEP | 16.1 | 83.9 | 100.0 | 638 |
| **TOTAL** | **14.7** | **85.3** | **100.0** | **70,896** |

Source: Derived from a special database provided by the Defense Manpower Data Center.
EPTS- existed prior to service; Non-EPTS- Did not exist prior to service.

Table 4.26c Percentage Distribution of Female High School Senior
DEP Participants by Discharge Code and Race, FYs 1990-1996

| DISCHARGE CODE BY RACE | BLACK | NON-BLACK | HIGH SCHOOL SENIOR DEP ACCESSIONS | |
|---|---|---|---|---|
| | | | PERCENT | NUMBER |
| FEMALE | | | | |
| MEDICAL DISQUAL EPTS | 17.3 | 82.7 | 3.2 | 514 |
| MED DISQUAL NONEPTS | 16.6 | 83.4 | 10.4 | 1,673 |
| PREGNANCY | 30.0 | 70.0 | 13.8 | 2,227 |
| DEATH | 13.0 | 87.0 | 0.1 | 23 |
| MORAL DISQUAL EPTS | 16.3 | 83.7 | 1.0 | 166 |
| MORAL DISQUAL NONEPTS | 19.7 | 80.3 | 1.4 | 223 |
| APATHY/PERSONAL PROBLEM | 20.9 | 79.1 | 17.1 | 2,750 |
| REFUSED TO ENLIST | 15.2 | 84.8 | 28.0 | 4,500 |
| DID NOT REPORT | 18.8 | 81.2 | 2.2 | 361 |
| CONCEAL OF PRIOR SERV. | 33.3 | 66.7 | 0.0 | 3 |
| DEPENDENCY DISQUAL | 26.7 | 73.3 | 0.3 | 45 |
| MARRIAGE | 6.5 | 93.5 | 0.2 | 31 |
| PERSONAL HARDSHIP | 14.0 | 86.0 | 0.3 | 50 |
| FAILURE TO GRADUATE | 18.2 | 81.8 | 10.0 | 1,606 |
| PURSUIT OF HIGHER ED | 33.2 | 66.8 | 5.0 | 802 |
| RELIGIOUS TRAINING | 66.7 | 33.3 | 0.0 | 3 |
| ENLISTED IN OTHER SERV. | 28.9 | 71.1 | 0.2 | 38 |
| RECRUITING ERROR | 26.7 | 73.3 | 0.2 | 30 |
| ENLISTING MISUNDERSTAND | 16.0 | 84.0 | 0.2 | 25 |
| DISQUAL FOR OPTION | 6.5 | 93.5 | 0.2 | 31 |
| TEMP DISQUAL FOR OPTION | 23.8 | 76.2 | 0.1 | 21 |
| OTHER REASON | 15.5 | 84.5 | 3.3 | 528 |
| TRANSFER TO IRR | 17.3 | 82.7 | 1.0 | 162 |
| DAT POSITIVE RESULTS | 20.0 | 80.0 | 0.6 | 90 |
| EXCEED TIME IN DEP | 24.3 | 75.7 | 1.2 | 189 |
| TOTAL | 20.0 | 80.0 | 100.0 | 16,091 |

Source: Derived from a special database provided by the Defense Manpower Data Center.
EPTS- existed prior to service; Non-EPTS- Did not exist prior to service.

## C.    SUMMARY

The data presented in this chapter tend to support the findings of previous research. High school seniors who are women have a higher probability (40.6 percent) of dropping out of the DEP than do seniors who are men (26.1 percent). The DEP attrition rate for all high school seniors is 30.8 percent. Previous research also shows that Black recruits tend to have lower dropout rates than do recruits who are White. In the present study, the difference in dropout rates between Blacks

and Non-Blacks is less than 1 percent. Additionally, the present study shows that Black women were more likely to drop out of the DEP when compared with Non-Black women but, again, only by a small margin.

High school seniors who are married tend to have a higher likelihood (25.7 percent) of remaining in the DEP, compared with seniors who are divorced (37.4 percent) or single (30.8 percent). Married high school seniors who are women, however, tend to drop out of the DEP at a higher rate (39.9 percent) than seniors who are married and male (23.0 percent). It should be emphasized that the numbers of seniors who are married or divorced are quite small, as one would expect.

The Air Force has the lowest DEP attrition rate of all the services, followed next by the Navy. The service with the highest DEP attrition rate is the Army. Also noted, over 90 percent of seniors in the Air Force sign DEP contracts for at least nine months. This is in contrast to the other services, where DEP lengths tend to be shorter.

Male high school seniors who receive an enlistment waiver are most likely to dropout of the DEP if the waiver was for age, number of dependents, mental qualifications, or physical qualifications (whether they existed before entry into the DEP or not). Further, female seniors who received DEP enlistment waivers are most likely to drop out of the DEP for physical

qualifications that did not exist before DEP entry, age, and number of dependents. Female seniors tend to have lower rates of attrition if they received a waiver for mental qualifications.

The main reasons why seniors are discharged from the DEP involved pursuit of higher education, positive drug test, enlistment misunderstanding, and pregnancy (for women).

# V.    DEP ATTRITION MODELS USING DMDC DATA

## A.    DESCRIPTION OF VARIABLES

The explanatory variables used in the estimation of this model fall into three categories: personal characteristics; recruiting policies; and economic factors. Dichotomous variables were also included for each fiscal year from FY 1990 through FY 1996. This was done so that the effects of changing unobserved factors on the probability of DEP attrition over these seven years could be captured.

Table 5.1 provides a description of the variables used in the models. Most of the variables are categorical except number of dependents (DEPS1), contracted months in the DEP (MNS_DEP1), and unemployment rate (UNEMPRAT).

Table 5.1 List of Variables and their Description

| Variable | Description |
| --- | --- |
| DEPLOSS[a] | 1 if attrited from the DEP; 0 if otherwise |
| AGE16_17 | 1 if aged 16 and 17 years; 0 if otherwise |
| AG18PLUS | 1 if aged 18 years and older; 0 if otherwise |
| FEMALE | 1 if female; 0 if otherwise |
| BLACK | 1 if Black; 0 if otherwise |
| MARRIED | 1 if married; 0 if otherwise |
| OTHENTNC | 1 if Pending National Agency Check or Entrance File; 0 if otherwise |
| HISTORIC[b] | 1 if National Agency Check based on historic data; 0 if otherwise |
| AFQT1_2[b] | 1 if AFQT Group Categories 1 and 2; 0 if otherwise |
| AFQT3A | 1 if AFQT Group Category 3A; 0 if otherwise |
| AFQT3B | 1 if AFQT Group Category 3B; 0 if otherwise |
| AFQT4 | 1 if AFQT Group Category 4; 0 if otherwise |
| FY90[b] | 1 if Fiscal Year 1990; 0 if otherwise |
| FY91 | 1 if Fiscal Year 1991; 0 if otherwise |
| FY92 | 1 if Fiscal Year 1992; 0 if otherwise |
| FY93 | 1 if Fiscal Year 1993; 0 if otherwise |
| FY94 | 1 if Fiscal Year 1994; 0 if otherwise |
| FY95 | 1 if Fiscal Year 1995; 0 if otherwise |
| FY96 | 1 if Fiscal Year 1996; 0 if otherwise |
| YES_DEP | 1 recruits had been in the DEP before; 0 if otherwise |
| DEPS1 | Number of dependents (Continuous) |
| BFEMALE | 1 if Black and Women; 0 if otherwise |
| MNS_DEP1 | Contracted Months in the DEP (Continuous) |
| UNEMPRAT | Unemployment Rate (Continuous) |

[a] Dependent variable
[b] Omitted categories (or base case variables)

## B.  SPECIFICATION OF THE DEP MODEL

Table 5.2 provides descriptive statistics for the variables used in the models.  Separate statistics are provided for all Services and separately for each of the military services. Recall that these characteristics pertain only to high school seniors in the DEP.

Table 5.2 Descriptive Statistics for Full Sample
and Individual Services

| Variable | Value | Full Sample | ARMY | NAVY | USMC | USAF |
|---|---|---|---|---|---|---|
| ARMY | % | 25.2 | n.a. | n.a. | n.a. | n.a. |
| MARINE | % | 27.8 | n.a. | n.a. | n.a. | n.a. |
| AIRFORCE | % | 11.9 | n.a | n.a. | n.a. | n.a. |
| AGE | Mean | 17.6 | 17.6 | 17.6 | 17.6 | 17.6 |
| AG18PLUS | % | 36.7 | 35.5 | 37.2 | 36.6 | 37.6 |
| FEMALE | % | 13.1 | 15.2 | 13.2 | 6.0 | 25.1 |
| BLACK | % | 15.6 | 17.6 | 17.7 | 12.9 | 11.8 |
| MARRIED | % | 1.0 | 1.2 | 1.0 | 0.6 | 1.9 |
| OTHENTNC | % | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| AFQT3A | % | 31.5 | 37.7 | 26.5 | 31.0 | 34.7 |
| AFQT3B | % | 28.5 | 20.7 | 33.4 | 33.4 | 19.5 |
| AFQT4 | % | 0.3 | 0.1 | 0.7 | 0.1 | 0.1 |
| FY91 | % | 13.7 | 12.6 | 15.2 | 13.2 | 12.9 |
| FY92 | % | 16.1 | 12.1 | 19.2 | 15.6 | 16.7 |
| FY93 | % | 16.5 | 17.8 | 15.7 | 16.4 | 16.5 |
| FY94 | % | 14.6 | 12.8 | 13.2 | 17.3 | 15.8 |
| FY95 | % | 14.4 | 16.7 | 12.2 | 14.9 | 14.8 |
| FY96 | % | 8.0 | 9.2 | 6.3 | 8.6 | 8.8 |
| YES_DEP | % | 3.0 | 3.3 | 3.5 | 2.7 | 1.7 |
| DEPS1 | Mean | 2.3 | 2.1 | 2.4 | 1.9 | 2.8 |
| BFEMALE | % | 2.9 | 4.2 | 3.0 | 1.2 | 4.0 |
| MNS_DEP1 | Mean | 8.56 | 7.8 | 8.3 | 9.2 | 11.3 |
| UNEMPRAT | Mean | 6.3 | 6.2 | 6.3 | 6.3 | 6.3 |
| DEPLOSS | % | 26.6 | 30.1 | 23.9 | 28.7 | 20.9 |
| No. of obs. | | 288,071 | 72,590 | 101,012 | 80,183 | 34,344 |

Note: The last three months of data were not available for FY96
for all services.
[a] Local Area Unemployment Rate by Regions (or Census Division)
n.a. = not applicable

For all Services the median or average high school senior
in the DEP is 17.6 years old, single, in AFQT Group 1 and 2
(less than 1 percent of all recruits were in AFQT Group 4), had
never been in the DEP before, and had no dependents.    The
average proportion of seniors 18 years and older is about 37
percent for all the services, with the Army being slightly lower
at 36 percent.    The percentage of women in the Marine Corps is
significantly lower than in the Army and the Navy, while the

percentage in the Air Force is much higher at 25 percent. The average proportion of Blacks in the Army and the Navy is 18 percent, but the average for the Marine Corps and the Air Force is 13 percent and 12 percent, respectively. The average individual signs an enlistment contract with delayed entry into the Army, Navy, and Marine Corps of about 8 months. The DEP contract time in the Air Force, however, is longer by three months, at 11.3 months. The Air Force also has the lowest DEP loss of 20.9 percent, compared to 30.1 percent on the Army, 23.9 percent in the Navy, and 28.7 percent in the Marine Corps.

## C. HYPOTHESIZED RELATIONSHIPS

The hypothesized signs for the variables are based upon the literature review. Married persons (MARRIED) are expected to be less likely to attrite from the DEP than single persons due to increased personal responsibilities, increased likelihood of having families, and because they are usually older than their single counterpart. The percentage of high school seniors with children is very low, but persons with dependents (DEPS1) tend to be more mature and more responsible than persons without dependents. Older high school seniors (AG19PLUS) will have a tendency to attrite less from the DEP than their younger counterparts. In this case, age is not necessarily an indicator of labor-market experience nor does it indicate a preference for military service (Kearl and Nelson, 1992). Instead, it is most

likely an indicator of potential high school success because the older students are those who were the least successful. Possibly due to decreased job opportunities in the labor force, Blacks tend to attrite less from the DEP than Non-Blacks. Generally, high quality recruits (AFQT Groups I to IIIA) are less likely to drop out of the DEP than low quality recruits (AFQT Groups IIIB and IV). One could also argue that lower AFQT category enlistees do not really impact negatively on attrition because of high taste for military and because they may think their ability to get a job in the civilian labor market is lower compared to the high quality group. According to the literature, Black females (BFEMALE) will have a lower attrition rate than all other categories. If regional unemployment rates are high, the rates of attrition for recruits are expected to be lower than when unemployment rates are low. There is some disagreement in the literature concerning the impact of the length of time an individual recruit spends in the DEP on attrition. My hypothesis is that the longer a recruit spends in the DEP, the less likely he or she is to attrite. For recruits who have been in the DEP before (YES_DEP), the hypothesis is that they would have a lower tendency to attrite than recruits who had never served in the DEP.

## D. MODEL RESULTS

The general model specification is:

DEPLOSS = f (Personal characteristics, Recruiting policies, and Economic factors).

The explicit specification is:

DEPLOSS = f (ARMY, NAVY, MARINE CORPS, AIRFORCE, AG18PLUS, FEMALE, BLACK, MARRIED, OTHENTNC AFQT3A, AFQT3B, AFQT4, FY91, FY92, FY93, FY94, FY95, FY96, YES_DEP, DEPS1, BFEMALE, MNS_DEP1, UNEMPRAT)

Table 5.3 provides maximum likelihood estimates of the DEPLOSS model for all DOD enlistees who are high school seniors. The table reports the effects of each variable on DEP attrition. The entries show the parameter estimates for the effect of each explanatory variable on the log-odds of attrition. Marginal (or partial) effects are also shown in the table and they indicate the effects of a one-unit change in each explanatory variable on the DEP attrition probability. This model was run with dummy variables for the individual Services to estimate the effect of DEP loss from one Service to the other.

The result shows that, compared to the Navy, high school seniors in the Air Force have a DEP attrition rate that is 9 percentage points lower. Additionally, the attrition rates for the Army and the Marine Corps are higher than the Navy's, 7.9 and 3.1 percentage points, respectively.

High school seniors whose National Agency Check was actually done when they entered had a DEP attrition rate. 13

percentage points lower than if the National Agency Check was based on historical data. Whether this is significant enough to justify the extra cost and effort to do actual checks, is something that must be decided by each service.

Table 5.3 LOGIT Estimates of DEP Attrition Model
For DOD, FY 1990-1996

| Variable | Parameter Estimate | Standard Error | Pr > Chi-Square | Marginal |
|---|---|---|---|---|
| INTERCPT | -2.4644 | 0.0362 | 0.0001* | 0.00000 |
| ARMY | 0.4541 | 0.0115 | 0.0001* | 0.07973 |
| MARINE | 0.1891 | 0.0112 | 0.0001* | 0.03082 |
| AIRFORCE | -0.7703 | 0.0166 | 0.0001* | -0.09204 |
| AG18PLUS | 0.1412 | 0.00929 | 0.0001* | 0.02269 |
| FEMALE | 0.9052 | 0.0137 | 0.0001* | 0.17705 |
| BLACK | 0.00723 | 0.0138 | 0.5990 | 0.00112 |
| MARRIED | -0.4047 | 0.0687 | 0.0001* | -0.05466 |
| OTHENTNC | -1.3372 | 0.1459 | 0.0001* | -0.13195 |
| AFQT3A | 0.0596 | 0.0105 | 0.0001* | 0.00935 |
| AFQT3B | 0.1924 | 0.0111 | 0.0001* | 0.03139 |
| AFQT4 | 0.5143 | 0.0766 | 0.0001* | 0.09176 |
| FY91 | -0.0116 | 0.0167 | 0.4887 | -0.00177 |
| FY92 | -0.0704 | 0.0183 | 0.0001* | -0.01059 |
| FY93 | 0.0347 | 0.017 | 0.0406** | 0.00540 |
| FY94 | -0.0211 | 0.0161 | 0.1909 | -0.00322 |
| FY95 | -0.0922 | 0.0157 | 0.0001* | -0.01378 |
| FY96 | 0.07 | 0.0187 | 0.0002* | 0.01102 |
| YES_DEP | -0.2504 | 0.0247 | 0.0001* | -0.03558 |
| DEPS1 | 0.0439 | 0.0347 | 0.2057 | 0.00685 |
| MNS_DEP1 | 0.1718 | 0.00182 | 0.0001* | 0.02786 |
| UNEMPRAT | -0.0659 | 0.00513 | 0.0001* | -0.00993 |
| BFEMALE | -0.3087 | 0.0299 | 0.0001* | -0.04303 |

Sample size: 288072
-2 LOG L: 16413.853 with 22 DF (p=0.0001)
Concordant ratio: 64.6 percent

Note: * significance at 1-percent level; ** significance at 5 percent level;
*** significance at 10-percent level

Compared to recruits who are 16 and 17 years old, those who are 18 years and older tended to have a higher DEP attrition rate of 2 percentage points. The results also show that women have a DEP attrition rate that is 17.7 percentage points higher

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than that of men.  While Blacks tend to attrite less than Non-Blacks, the magnitude of the difference is small.  The table also shows that Black women tended to have a lower probability of DEP loss rate (a 4.3 percentage difference) than all other race-gender groups.  Additionally, married recruits, while only a very small percent of the total number of recruits, have a DEP attrition rate 5 points lower than that of recruits who are single.  Table 5.3 also shows that high school seniors in AFQT Group 4 have a DEP loss rate that is 9 percentage points higher than the other AFQT categories.  This is in agreement with past research studies.  It would appear that none of the recruiting policies pertaining to the DEP had much impact on the DEP loss rate of high school seniors over this period as the dummy variables for fiscal year indicate no trend in loss rates.

High school seniors who had served in the DEP before were less likely (by about 3.5 percentage points) to drop out of the DEP when compared to seniors who had never been in the DEP.  The table also shows that one additional contracted month in the DEP increases the probability of DEP attrition by 2.8 percentage points.  Additionally, the variable for the number of dependents (DEPS1) was not significant.  Lastly, higher regional unemployment rates accounted for a 1-percentage point decrease in the DEP loss attrition rate.

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Tables 5.4 through 5.7 display the separate logit model results for each individual service. Table 5.8 summarizes the marginal effects for key variables.

The logistic results in Table 5.4 for the Army show that variables BLACK, DEPS1, and MNS_DEP1 all have different signs than what was hypothesized. According to the results, older high school seniors and Blacks are more likely to attrite compared to younger and Non-Black recruits. Contrary to my hypothesis, but in line with most prior research, persons who

Table 5.4 LOGIT Estimates of DEP Attrition Model
For the Army, FY 1990-1996

| Independent Variable | Parameter Estimate | Standard Error | Pr > Chi-Square | Marginal |
|---|---|---|---|---|
| INTERCPT | -2.6229 | 0.0701 | 0.0001* | 0.00000 |
| AG18PLUS | 0.2639 | 0.0184 | 0.0001* | 0.05154 |
| FEMALE | 1.0157 | 0.0261 | 0.0001* | 0.22633 |
| BLACK | 0.0465 | 0.0262 | 0.0756*** | 0.00862 |
| MARRIED | -0.1476 | 0.1361 | 0.2780 | -0.02599 |
| OTHENTNC | -1.1567 | 0.2678 | 0.0001* | -0.15042 |
| AFQT3A | 0.0466 | 0.0191 | 0.0146** | 0.00864 |
| AFQT3B | 0.2705 | 0.0244 | 0.0001* | 0.05292 |
| AFQT4 | 0.8041 | 0.2326 | 0.0005* | 0.17419 |
| FY91 | -0.0663 | 0.0325 | 0.0414** | -0.01194 |
| FY92 | -0.0559 | 0.0376 | 0.1377 | -0.010009 |
| FY93 | -0.0264 | 0.0322 | 0.4115 | -0.0048 |
| FY94 | -0.0896 | 0.0313 | 0.0042* | -0.01602 |
| FY95 | -0.1881 | 0.0282 | 0.0001* | -0.03275 |
| FY96 | -0.0285 | 0.0343 | 0.4053 | -0.00519 |
| YES_DEP | -0.5908 | 0.0467 | 0.0001* | -0.09156 |
| DEPS1 | 0.0362 | 0.0787 | 0.6457 | 0.00669 |
| BFEMALE | -0.4084 | 0.0523 | 0.0001* | -0.0668 |
| MNS_DEP1 | 0.2274 | 0.00337 | 0.0001* | 0.04404 |
| UNEMPRAT | -0.0446 | 0.0104 | 0.0001* | -0.00808 |

Sample size: 72,590
-2 LOG L 6619.58 with 19 DF (p=0.0001);
Concordant ratio: 68.0 percent

Note: * significance at 1-percent level; ** significance at 5 percent level;
*** significance at 10-percent level

have a longer contracted time in the DEP have a higher likelihood of attrition. AFQT Category IV (AFQT4) recruits have a higher tendency to attrite from the DEP than the other categories. Most variables are significant at the 1-percent level. However, the variables MARRIED, FY92, FY93, FY96, and DEPS1 are all insignificant.

In the marginal effects, the DEP attrition rate for women is 22 percentage points higher than for men. That is, women are twice as likely to attrite as men. However, Black women have a lower DEP loss rate. The difference is about 6 points, or 25 percent. Compared to AFQT Group 1 and 2, lower AFQT groups have a loss rate that is about 17 points higher. According to the prior research, unemployment rate is an important indicator in explaining attrition. It appears, however, to have a small effect (a 1-percetange point decrease) on the attrition rate of Army seniors in the DEP. Compared to Army high school seniors who had never been in the DEP, the attrition rate for high school seniors with prior DEP time is about 9 percentage points lower.

The logistic results for the Navy in Table 5.5 show that variables BLACK and MNS_DEP1 have different signs than what was hypothesized. While in the Army model the dependent variable (DEPS1) had an unexpected sign, it does have the expected sign in this model. According to the results, older high school

seniors and Blacks in the DEP are more likely to attrite compared to younger and Non-Black recruits. In agreement with the literature review, AFQT4 category personnel do have a higher tendency to attrite from the DEP than higher AFQT test-score personnel. Most variables are significant at the 1-percent level. Again, the variables MARRIED, FY92, FY93, FY96, and DEPS1 are all insignificant.

In the marginal effect calculations, the three variables with the largest differences are WOMEN, OTHENTNC, and AFQT4. The attrition rate for women is 14 percentage points higher than

Table 5.5 LOGIT Estimates of DEP Attrition Model
For the Navy, FY 1990-1996

| Independent Variable | Parameter Estimate | Standard Error | Pr > Chi-Square | Marginal |
|---|---|---|---|---|
| INTERCPT | -2.3064 | 0.0603 | 0.0001* | 0.00000 |
| AG18PLUS | 0.1401 | 0.0161 | 0.0001* | 0.02036 |
| FEMALE | 0.7988 | 0.0235 | 0.0001* | 0.14106 |
| BLACK | 0.0908 | 0.0225 | 0.0001* | 0.01299 |
| MARRIED | -0.4235 | 0.1271 | 0.0009* | -0.05086 |
| OTHENTNC | -1.4734 | 0.2616 | 0.0001* | -0.12281 |
| AFQT3A | 0.0738 | 0.0193 | 0.0001* | 0.01051 |
| AFQT3B | 0.2575 | 0.0184 | 0.0001* | 0.03887 |
| AFQT4 | 0.4803 | 0.0883 | 0.0001* | 0.07763 |
| FY91 | -0.0724 | 0.0280 | 0.0097* | -0.00982 |
| FY92 | -0.1034 | 0.0298 | 0.0005* | -0.01387 |
| FY93 | -0.00844 | 0.0292 | 0.7722 | -0.00117 |
| FY94 | -0.1029 | 0.0286 | 0.0003* | -0.01381 |
| FY95 | -0.1425 | 0.0284 | 0.0001* | -0.01886 |
| FY96 | -0.028 | 0.0356 | 0.4325 | -0.00385 |
| YES_DEP | -0.0779 | 0.0390 | 0.0456** | -0.01055 |
| DEPS1 | -0.00389 | 0.0526 | 0.941 | -0.00054 |
| BFEMALE | -0.1728 | 0.0495 | 0.0005* | -0.02263 |
| MNS_DEP1 | 0.1575 | 0.00299 | 0.0001* | 0.02302 |
| UNEMPRAT | -0.0686 | 0.00888 | 0.0001* | -0.00931 |

Sample size: 101,012
-2 LOG L : 4,540.891 with 19 DF (p=0.0001); Concordant ratio: 63.5 percent
Note: * significance at 1-percent level; ** significance at 5-percent level.

for males. That is, women are about one and one-half times as likely to attrite from the DEP as men. Compared to AFQT Group 1 and 2, lower AFQT groups have a loss rate of about 8 percentage points lower. The probability of DEP loss for high school seniors increases by 1 percentage point for a one-percent change in the regional unemployment rate.

All but three variables depicted in Table 5.6 for the Marine Corps model are significant at the 5-percent level or higher. The variable AFQT4 was significant in the Army and Navy model but is not significant in this model. All the variables

Table 5.6 LOGIT Estimates of DEP Attrition Model
For the Marine Corps, FY 1990-1996

| Independent Variable | Parameter Estimate | Standard Error | Pr > Chi-Square | Marginal |
|---|---|---|---|---|
| INTERCPT | -2.2571 | 0.0669 | 0.0001* | 0.00000 |
| AG18PLUS | 0.1164 | 0.017 | 0.0001* | 0.02155 |
| FEMALE | 0.8954 | 0.0345 | 0.0001* | 0.19418 |
| BLACK | -0.0637 | 0.0256 | 0.0129** | -0.01126 |
| MARRIED | -0.5850 | 0.1428 | 0.0001* | -0.08881 |
| OTHENTNC | -1.3828 | 0.2724 | 0.0001* | -0.16332 |
| AFQT3A | 0.0664 | 0.0197 | 0.0008* | 0.01213 |
| AFQT3B | 0.1286 | 0.0196 | 0.0001* | 0.02389 |
| AFQT4 | 0.2629 | 0.2484 | 0.2900 | 0.05045 |
| FY91 | 0.0952 | 0.0319 | 0.0029* | 0.01753 |
| FY92 | -0.0756 | 0.0349 | 0.0303** | -0.01332 |
| FY93 | 0.0924 | 0.0325 | 0.0045* | 0.01701 |
| FY94 | 0.1254 | 0.0296 | 0.00018 | 0.02326 |
| FY95 | 0.1464 | 0.0297 | 0.00018 | 0.02732 |
| FY96 | 0.3958 | 0.0343 | 0.0001* | 0.0783 |
| YES_DEP | -0.2429 | 0.0484 | 0.0001* | -0.04082 |
| DEPS1 | 0.0265 | 0.0645 | 0.6811 | 0.00479 |
| BFEMALE | -0.1281 | 0.0788 | 0.1043 | -0.02223 |
| MNS_DEP1 | 0.1453 | 0.00347 | 0.0001* | 0.02711 |
| UNEMPRAT | -0.0401 | 0.00917 | 0.0001* | -0.00714 |

Sample size: 80,183
-2 LOG L: 2816.738 with 19 DF (p=0.0001;
Concordant ratio: 60.7 percent

Note: * significance at 1-percent level and ** significance at 5-percent level.

have the expected signs as hypothesized. Women can be expected to have DEP loss rates 19-percentage points higher than that of men. As in the logistic model for the Army, they are twice as likely as men to attrite from the DEP. Recruits who had served in the DEP before are 4 percent less likely to attrite than those who had never been in the DEP (they have a 24 percent probability of leaving the DEP). Married recruits are 9 percent less likely to drop out of the DEP than single recruits.

Table 5.7 presents estimates of this logistic model for the Air Force. Again, most of the variables in this model are

Table 5.7 LOGIT Estimates of DEP Attrition Model
For the Air Force, FY 1990-1996

| Independent Variable | Parameter Estimate | Standard Error | Pr > Chi-Square | Marginal |
|---|---|---|---|---|
| INTERCPT | -2.3077 | 0.1483 | 0.0001* | 0.00000 |
| AG18PLUS | -0.0392 | 0.0285 | 0.1689 | -0.00512 |
| FEMALE | 0.9815 | 0.0305 | 0.0001* | 0.17501 |
| BLACK | -0.3881 | 0.0619 | 0.0001* | -0.04485 |
| MARRIED | -0.8445 | 0.238 | 0.0004* | -0.08292 |
| OTHENTNC | -1.1425 | 0.4348 | 0.0086* | -0.100095 |
| AFQT3A | 0.0364 | 0.0309 | 0.2388 | 0.00487 |
| AFQT3B | 0.0801 | 0.0372 | 0.0311** | 0.0109 |
| AFQT4 | 0.1899 | 0.4312 | 0.6596 | 0.02681 |
| FY91 | 0.171 | 0.0543 | 0.0016* | 0.02398 |
| FY92 | 0.2851 | 0.0582 | 0.0001* | 0.04151 |
| FY93 | 0.312 | 0.054 | 0.0001* | 0.04584 |
| FY94 | 0.0586 | 0.051 | 0.2507 | 0.00791 |
| FY95 | -0.265 | 0.0515 | 0.0001* | -0.03199 |
| FY96 | -0.199 | 0.0591 | 0.0008* | -0.02459 |
| YES_DEP | -0.0598 | 0.1042 | 0.5665 | -0.00775 |
| DEPS1 | 0.3002 | 0.1513 | 0.0473** | 0.04393 |
| BFEMALE | -0.2768 | 0.093 | 0.0029* | -0.03328 |
| MNS_DEP1 | 0.1557 | 0.0102 | 0.0001* | 0.02173 |
| UNEMPRAT | -0.181 | 0.0161 | 0.0001* | -0.02251 |

Sample size: 34,344
-2 LOG L: 1719.548 with 19 DF (p=0.0001);
Concordant ratio: 64.2 percent

Note: * significance at 1-percent level and ** significance at 5-percent level.

significant at the 1-percent level (AFQT3B is significant at 5 percent). Compared to men, women have an attrition rate that is 17 percentage points higher. Recruits with dependents have a 30 percent chance of dropping out of the DEP but only a difference of 4 percentage points when comparing them to recruits without dependents.

## E.    SUMMARY

Table 5.8 summarized the marginal effects of the DOD and the individual Service models. Most of the variables are significant at the 1-percent level.

### 1.    Personal Characteristics

As seen in Table 5.8, the single characteristic with the greatest effect is for gender. Women can be expected to have DEP loss rates nearly 18 percentage points higher (on average) than that of men. Additionally, the effect of being a woman on DEP loss is greater in the Army and the Marine Corps than in the Navy and the Air Force.

As expected, recruits in the lowest AFQT category have the highest rate of attrition across the services compared to the other AFQT categories. The effect of this variable is especially large for Army enlistees. Although the number of seniors in the lowest AFQT categories is small, they represent the group least likely to honor their enlistment contract.

Age also has a noticeable effect on DEP loss. While older

recruits in the DEP tend to attrite in the Army, Navy, and the Marine Corps, the opposite is true for the Air Force. (Age is not significant for the Air Force.) Each additional year of age increases the probability of DEP loss by at least 2 points across the Services (except as already noted).

Table 5.8 Marginal Effects of DOD and the Individual Services Models

| Independent Variable | DOD | ARMY | NAVY | MARINE CORPS | AIR FORCE |
|---|---|---|---|---|---|
| ARMY | 0.07973* | n.a. | n.a. | n.a. | n.a. |
| MARINE CORPS | 0.03082* | n.a. | n.a. | n.a. | n.a. |
| AIR FORCE | -0.09204* | n.a. | n.a. | n.a. | n.a. |
| AGE18PLUS | 0.02269* | 0.05154* | 0.02036* | 0.02155* | -0.00512 |
| FEMALE | 0.17705* | 0.22633* | 0.14106* | 0.19418* | 0.17501* |
| BLACK | -0.00112* | 0.00862*** | 0.01299* | -0.01126** | -0.04485* |
| BFEMALE | -0.04303* | -0.0668* | -0.02263* | -0.02223 ^ | -0.03328* |
| OTHENTNC | -0.13195* | -0.15042 | -0.12281 | -0.16322 | -0.10095 |
| MARRIED | -0.05466* | -0.02599 | -0.05086* | -0.08881* | -0.08292* |
| AFQT3A | 0.00935* | 0.00864** | 0.01051* | 0.01213* | -0.00487 |
| AFQT3B | 0.03139* | 0.05292* | 0.03887* | 0.02389* | 0.01090** |
| AFQT4 | 0.09176* | 0.17419* | 0.07763* | 0.05045 | 0.02681 |
| YES_DEP | -0.03558* | -0.09156* | -0.01055** | -0.04082* | -0.00775 |
| DEPS1 | 0.00685* | 0.00669 | -0.00054 | 0.00479 | 0.04393** |
| MNS_DEP1 | 0.02786* | 0.04404* | 0.02302* | 0.02711* | 0.02173* |
| UNEMPRAT | -0.00993* | -0.00808* | -0.00931* | -0.00714* | -0.02251* |

Note: * significance at 1-percent level; ** significant at 5-percent level; *** significant at 10-percent level.
^ slightly over the 10-percent level of significance

According to the results, Blacks have about the same attrition rate as Non-Blacks. The effect of being Black in the Army and Navy (slightly negative) is different than if the senior was in the Marine Corps or the Air Force (slightly positive). Additionally, Blacks do tend to attrite less from the Air Force.

The variable for Black women is mostly significant at the

1-percent level (except for the Marine Corps). Across the services, Black women have an attrition rate that is 4.3 percentage points lower than that of other race-gender categories.

The Services with the greatest effect for seniors who had been in the DEP before (YES_DEP) are the Army (9 percentage points) and the Marine Corps (4 percentage points). The number of high school seniors with dependents is very low. Surprisingly, except for the Air Force (4 percentage points), the effect of having dependents on DEP loss is negligible.

## 2. Recruiting Incentives

Among the recruiting policy variables, the contracted time in the DEP accounts for the strongest (but modest) effects on DEP loss. Every additional contracted month in the DEP increases the probability of DEP loss by at least 2.2 percentage points. The component where the effect of DEP contract is the largest is the Army.

The effect of regional unemployment rate on the attrition of high school seniors from the DEP is small. This could be because the high school seniors are still in school and are not really considering the labor market. That is, they have not been look for work. At this age, most tend to get jobs in relatively low-paying occupations and those kind of jobs are readily available.

# VI.    DEP ATTRITION MODELS USING CNRC DATA

## A.    DESCRIPTION OF VARIABLES

The explanatory variables used in the models estimated with the CNRC data set fall into three categories: personal characteristics; recruiting policies; and economic conditions. Dichotomous variables were also included for FY 1990 through FY 1996, to capture the effects of changing unobserved variables on the probability of DEP attrition over these seven years.

Table 6.1 describes the variables used in the logistic models. Most of the variables are categorical except number of dependents (DEPS1), contracted months in the DEP (MNS_DEP1), and the regional unemployment rate (UNEMPRAT).

Table 6.1 List of Variables and their Description

| VARIABLE | DESCRIPTION |
|---|---|
| DEPLOSS[a] | 1 if recruits attrited from the DEP; 0 if otherwise |
| AGE16_17 | 1 if aged 16 and 17 years; 0 if otherwise |
| AG19PLUS | 1 if aged 19 years and older; 0 if otherwise |
| FEMALE | 1 if female; 0 if otherwise |
| BLACK | 1 if Black; 0 if otherwise |
| HISPANIC | 1 if Hispanic; 0 if otherwise |
| ASIAN | 1 if Asian; 0 if otherwise |
| ROTHER | 1 if not in above groups; if otherwise |
| AFQT1_2[b] | 1 if AFQT Group Categories 1 and 2; 0 if otherwise |
| AFQT3A | 1 if AFQT Group Category 3A; 0 if otherwise |
| AFQT3B | 1 if AFQT Group Category 3B; 0 if otherwise |
| AFQT4 | 1 if AFQT Group Category 4; 0 if otherwise |
| FY90[b] | 1 if Fiscal Year 1990; 0 if otherwise |
| FY91 | 1 if Fiscal Year 1991; 0 if otherwise |
| FY92 | 1 if Fiscal Year 1992; 0 if otherwise |
| FY93 | 1 if Fiscal Year 1993; 0 if otherwise |
| FY94 | 1 if Fiscal Year 1994; 0 if otherwise |
| FY95 | 1 if Fiscal Year 1995; 0 if otherwise |
| FY96 | 1 if Fiscal Year 1996; 0 if otherwise |
| YESBONUS | 1 if recruits received a bonus; 0 if otherwise |
| BFEMALE | 1 if Black and Women; 0 if otherwise |
| MNS_DEP1 | Contracted months in the DEP (Continuous) |
| NAVYFUND | 1 if recruits received NCF; 0 if otherwise |
| SCHGUAR | 1 if guaranteed school or job; 0 if otherwise |
| AEFATF | 1 if recruits signed for technical program; 0 if otherwise |
| NUCLEAR | 1 if recruits signed for nuclear program: 0 if otherwise |
| GENDET | 1 if Gendet; 0 if otherwise |
| TW_3YEAR | 1 if recruits signed for 2 or 3 years; 0 if otherwise |
| FIV_6YER | 1 if recruits signed for 5 or 6 years; 0 if otherwise |
| UNEMPRAT | Unemployment Rate (Continuous) |

[a] Dependent variable
[b] Omitted categories (or base case variables)

## B.    SPECIFICATIONS OF THE DEP MODEL

Table 6.2 provides descriptive statistics for the variables used in the Navy model.  The average individual in the DEP is 18 years old, single, in AFQT categories 1 and 2 (less than 1 percent of all recruits were in AFQT Group 4), had never been in the DEP before, and had no dependents.  About 20 percent of Navy recruits are 19 years and older.  Additionally, recruits

entering the DEP signed enlistment contracts for an average of

8.5 months, and the average unemployment rate for fiscal years

1990 through 1996 was 7.3.

Table 6.2 Descriptive Statistics
for the CNRC Data Set

| VARIABLE | VALUE | NUMBER |
|---|---|---|
| AGE | Mean Years | 18.0 |
| AGE16-17 | % | 25.4 |
| AGE18 | % | 54.3 |
| AGE19PLUS | % | 20.3 |
| FEMALE | % | 12.5 |
| WHITE | % | 67.9 |
| BLACK | % | 17.5 |
| HISPANIC | % | 10.7 |
| ASIAN | % | 1.5 |
| ROTHER | % | 1.2 |
| AFQT | Mean Score | 58.6 |
| AFQT1-2 | % | 38.1 |
| AFQT3A | % | 26.6 |
| AFQT3B | % | 34.5 |
| AFQT4 | % | 0.8 |
| FY90 | % | 20.1 |
| FY91 | % | 13.1 |
| FY92 | % | 16.3 |
| FY93 | % | 13.6 |
| FY94 | % | 11.9 |
| FY95 | % | 12.5 |
| FY96 | % | 12.7 |
| NAVYFUND | % | 8.0 |
| SCHGUAR | % | 45.2 |
| AEFATF | % | 10.0 |
| NUCLEAR | % | 6.2 |
| GENDET | % | 13.7 |
| TW_3YEAR | % | 16.5 |
| FIV_6YER | % | 8.4 |
| YESBONUS | % | 6.7 |
| DEPS1 | % | 1.0 |
| BFEMALE | % | 2.9 |
| MNS_DEP1 | Mean | 8.52 |
| UNEMPRAT[a] | Mean | 7.33 |
| DEPLOSS | % | 21.2 |
| No. of obs. | | 180,997 |

[a] Local Area Unemployment Rate by Regions
(or Census Division)

The CNRC data set includes several variables that reflect the type of enlistment contract signed by the recruit. NAVYFUND indicates that the recruit decided to participate in the NCF to get money to attend college at a later date; SCHGUAR indicates that the high school senior was guaranteed a particular job or school, such as diving or hospital corpsman; AEFATF means that the senior signed an enlistment contract for a job in the electronic or technical field; NUCLEAR indicates that the recruit signed for a job in the nuclear program; GENDET means that the recruit signed an enlistment contract as an undesignated striker (no job assignment); TW_3YEAR indicate that the recruit signed the enlistment contract obligating himself or herself to 2 to 3 years of service; and FIV_6YER indicate an enlistment contract for 5 to 6 years.

Table 6.2 shows that 8 percent of the enlistees participated in the Navy College Fund (NCF). The majority (45.2 percent) of these enlistees had schools that were guaranteed upon enlistment. About 14 percent of the high school seniors signed enlistment contracts as GENDETs, 10 percent in the electronic/technical field, and 6 percent signed up for the nuclear program. Lastly, 16.5 percent of recruits signed contracts for 2 to 3 years and, 8.4 percent signed contracts up for 5 to 6 years.

## C. HYPOTHESIZED RELATIONSHIPS

The hypothesized signs for the variables are the same as expressed in Chapter V. Married persons (MARRIED) are expected to be less likely to attrite from the DEP than single persons due to increased personal responsibilities. Again, the percentage of high school seniors with children is very low, but persons with dependents (DEPS1) tend to be more mature and more responsible than persons without dependents. Older high school seniors (AG19PLUS) will have a tendency to attrite less from the DEP than their younger counterparts. Possibly due to decreased job opportunities in the labor force, Blacks tend to attrite less from the DEP than Non-Blacks. This may also be true for Asians and Black women. Hispanics, however, due to strong family ties, are more likely to attrite. Generally, high quality recruits (AFQT Groups I to IIIA) are less likely to drop out of the DEP than low quality recruits (AFQT Groups IIIB and IV). One could also argue that recruits in lower AFQT categories would not really have lower attrition rates if the recruits had a high taste for military life. Also they may think their ability to get a job in the civilian labor market is lower compared to the high quality group. If regional area unemployment rates are high, attrition rates for recruits will tend to be lower. There is some disagreement in the literature concerning the impact of the contracted length of time an

individual recruit spends in the DEP on attrition. My hypothesis is that the greater the amount of time a recruit contracts for in the DEP, the less likely he or she is to attrite.

Seniors who participate in the Navy College Fund (NAVYFUND), receive a bonus (YESBONUS), signed for technical (AEFATF) and nuclear (NUCLEAR) jobs, are all less likely to drop out of the DEP. The reason for this is that seniors who are eligible for these programs are high quality recruits and have expressed the desire to be in these programs. GENDETS are high school seniors who enlisted as "undesignated strikers." That is, they enlisted without a specific job assignment and are usually sent directly to the fleet. Again, the variable TW_3YEAR means senior who enlisted for two or three years, and FIV_6YER indicate those seniors who enlisted for five or six years in the Navy.

It is hypothesized that high school seniors who participate in the NCF, enlist for electronic/technical and nuclear programs, or signed contracts for 2 to 3 years, will have a lower tendency to attrite from the DEP. Those seniors who enlisted as GENDETS or signed contracts for 5 to 6 years (not inclusive of those seniors in the nuclear or electronic/technical programs) will tend to drop out of the more at a higher rate.

## D.   MODEL RESULTS

The model specification is:

DEPLOSS = f (Services, Personal characteristics, Recruiting policies, and Economic conditions)

or more explicitly,

DEPLOSS = f (AGE16_17, AG19PLUS, FEMALE, BLACK, BFEMALE, BLACK, HISPANIC, ASIAN ROTHER, AFQT3A, AFQT3B, AFQT4, FY91, FY92, FY93, FY94, FY95, FY96, NAVYFUND, AEFATF, NUCLEAR, GENDET, TW_3YEAR, FIV_6YER, YESBONUS, DEPS1, BFEMALE, MNS_DEP1, UNEMPRAT)

Table 6.3 provided the parameter estimates of a model that is specified as closely as possible to the Navy model estimated above, in Table 5.5, using DMDC data. The only differences in the specification are Table 6.3 includes DEPWAIVR and omits UNEMPRAT. Again, most of the variables are significant at the 1- percent level. The data show that when Navy high school seniors are younger, Black, Asian, and of higher quality (in AFQT categories I-IIIA), they were less likely to drop out of the DEP. Also shown in the table, the longer the DEP contract, the more likely he/she is to attrite. If recruits are Black women, or if they received a DEP waiver, they had a lower probability of attrition.

Table 6.3 Navy DEP Attrition Model without Unemployment and
Navy Enlistment Variables (using CNRC Data), FYs 1990-1996

| Variable | Parameter Estimate | Standard Error | Pr > Chi-Square | Marginal |
|---|---|---|---|---|
| INTERCPT | -2.5014 | 0.0252 | 0.0001* | 0.00000 |
| AGE16_17 | -0.1500 | 0.0144 | 0.0001* | 0.12302 |
| AG19PLUS | 0.2408 | 0.0154 | 0.0001* | -0.00410 |
| FEMALE | 0.6593 | 0.0182 | 0.0001* | -0.01982 |
| BLACK | -0.0266 | 0.0179 | 0.1375 | 0.01229 |
| HISPANIC | 0.0772 | 0.0189 | 0.0001* | -0.00239 |
| ASIAN | -0.1328 | 0.0492 | 0.0070* | 0.00898 |
| ROTHER | -0.0154 | 0.0544 | 0.7766 | 0.02835 |
| AFQT3A | 0.0568 | 0.0150 | 0.0002* | 0.04726 |
| AFQT3B | 0.1731 | 0.0145 | 0.0001* | -0.02226 |
| AFQT4 | 0.2798 | 0.0681 | 0.0001* | 0.04023 |
| FY91 | -0.3360 | 0.0215 | 0.0001* | -0.04696 |
| FY92 | -0.2453 | 0.0196 | 0.0001* | -0.03531 |
| FY93 | -0.1232 | 0.0205 | 0.0001* | -0.01843 |
| FY94 | -0.0626 | 0.0217 | 0.0039* | -0.00955 |
| FY95 | 0.1355 | 0.0207 | 0.0001* | 0.02194 |
| FY96 | 0.0911 | 0.0213 | 0.0001* | 0.01455 |
| BFEMALE | -0.1015 | 0.0398 | 0.0107** | -0.01530 |
| MNS_DEP1 | 0.1254 | 0.00223 | 0.0001* | -0.03627 |
| DEPWAIVR | -0.2526 | 0.0253 | 0.0001* | 0.02024 |

Sample size: 180990
-2 LOG L: 5330.217
Concordant ratio: 61.3 percent

Note: * significant at 1-percent level; ** significant at
5-percent level; *** significant at 10-percent level

Table 6.4 shows that when unemployment rate is added to the
basic model (in Table 6.3), the signs for the variables all stay
the same and there were only small changes in the parameter
estimates. The general results are the same as in Table 6.3.
The variable for regional unemployment data is significant at
the 5-percent level. In Table 5.5, the DMDC data, the
unemployment rate has a marginal effect of less than 1 percent
and in Table 6.4, the marginal effect is about the same.

Table 6.4 Navy DEP Attrition Model without Navy Enlistment Program but with Unemployment Variable (using CNRC Data), FYs 1990-1996

| Variable | Parameter Estimate | Standard Error | Pr > Chi-Square | Marginal |
|---|---|---|---|---|
| INTERCPT | -2.3472 | 0.0681 | 0.0001* | 0.00000 |
| AGE16_17 | -0.1515 | 0.0144 | 0.0001* | 0.12249 |
| AG19PLUS | 0.2403 | 0.0154 | 0.0001* | -0.00424 |
| FEMALE | 0.6611 | 0.0183 | 0.0001* | -0.01956 |
| BLACK | -0.0278 | 0.0178 | 0.1180 | 0.01249 |
| HISPANIC | 0.0791 | 0.0189 | 0.0001* | -0.00238 |
| ASIAN | -0.1324 | 0.0492 | 0.0072* | 0.00888 |
| ROTHER | -0.0155 | 0.0544 | 0.7752 | 0.02796 |
| AFQT3A | 0.0567 | 0.015 | 0.0002* | 0.04545 |
| AFQT3B | 0.1723 | 0.0145 | 0.0001* | -0.02225 |
| AFQT4 | 0.2720 | 0.0682 | 0.0001* | 0.03979 |
| FY91 | -0.2974 | 0.0268 | 0.0001* | -0.04166 |
| FY92 | -0.1628 | 0.0391 | 0.0001* | -0.02382 |
| FY93 | -0.0270 | 0.0446 | 0.5453 | -0.00412 |
| FY94 | 0.0136 | 0.0381 | 0.7203 | 0.00211 |
| FY95 | 0.1863 | 0.0294 | 0.0001* | 0.03036 |
| FY96 | 0.1349 | 0.0279 | 0.0001* | 0.02165 |
| BFEMALE | -0.0972 | 0.0383 | 0.0113** | -0.01452 |
| MNS_DEP1 | 0.1247 | 0.00224 | 0.0001* | -0.03480 |
| DEPWAIVR | -0.2441 | 0.0256 | 0.0001* | 0.01996 |
| URATE | -0.0272 | 0.0112 | 0.0149** | -0.00415 |

Sample size: 180991
-2 LOG L: 5335.928 with 20 DF (p=0.0001)
Concordant ratio: 61.4 percent

Note: * significant at 1-percent level; ** significant at 5-percent level; *** significant at 10-percent level

Table 6.5 shows the logistic model results for the DEP attrition model including the Navy enlistment program variables. All of the variables have the expected sign. The variable with the largest marginal effect on DEP loss is high school seniors who are 16 and 17 years old. This group has a DEP attrition rate about 13 points higher than seniors who are 18 years old. Recruits who are 19 years and older tend to have the lowest attrition rates but their rates are not much different from the base case. The data also shows that high school seniors who are

women have a slightly higher attrition rate (1.6 points) from the DEP than did men.

Table 6.5 Navy DEP Attrition Model without Unemployment Variable (using CNRC Data), FYs 1990-1996

| Variable | Parameter Estimate | Standard Error | Pr > Chi-Square | Marginal |
|---|---|---|---|---|
| INTERCPT | -2.4524 | 0.0269 | 0.0001* | 0.00000 |
| AGE16_17 | -0.1475 | 0.0144 | 0.0001* | 0.12407 |
| AG19PLUS | 0.2347 | 0.0154 | 0.0001* | -0.00586 |
| FEMALE | 0.6439 | 0.0185 | 0.0001* | -0.02131 |
| BLACK | -0.0364 | 0.0178 | 0.0405** | 0.01170 |
| HISPANIC | 0.0704 | 0.0189 | 0.0002* | -0.00291 |
| ASIAN | -0.1366 | 0.0493 | 0.0056* | -0.00049 |
| ROTHER | -0.018 | 0.0544 | 0.7410 | 0.01408 |
| AFQT3A | -0.00301 | 0.0161 | 0.8520 | 0.03343 |
| AFQT3B | 0.0845 | 0.0166 | 0.0001* | -0.01225 |
| AFQT4 | 0.1944 | 0.0688 | 0.0047* | -0.02604 |
| FY91 | -0.3478 | 0.0217 | 0.0001* | 0.01065 |
| FY92 | -0.2646 | 0.0204 | 0.0001* | 0.01336 |
| FY93 | -0.1391 | 0.0212 | 0.0001* | -0.01138 |
| FY94 | -0.0684 | 0.0227 | 0.0026* | -0.02294 |
| FY95 | 0.1397 | 0.0219 | 0.0001* | 0.04082 |
| FY96 | 0.1003 | 0.0221 | 0.0001* | -0.00712 |
| NAVYFUND | -0.0444 | 0.0235 | 0.0585*** | -0.05081 |
| AEFATF | -0.0771 | 0.0236 | 0.0011* | -0.03968 |
| NUCLEAR | -0.1685 | 0.0305 | 0.0001* | -0.02169 |
| GENDET | 0.0642 | 0.0197 | 0.0011* | -0.01089 |
| TW_3YEAR | 0.0802 | 0.0177 | 0.0001* | 0.04702 |
| FIV_6YER | -0.0715 | 0.0218 | 0.001* | 0.01680 |
| YESBONUS | -0.1698 | 0.0283 | 0.0001* | -0.02622 |
| BFEMALE | -0.0944 | 0.0384 | 0.0139** | -0.01492 |
| DEPWAIVR | -0.2671 | 0.0258 | 0.0001* | -0.04002 |
| MNS_DEP1 | 0.1283 | 0.00227 | 0.0001* | 0.02166 |

Sample size: 180997
-2 LOG L: 5501.834 with 26 DF (p=0.0001)
Concordant ratio: 61.5 percent

Note: * significant at 1-percent level; ** significant at 5-percent level; *** significant at 10-percent level

There is very little impact of race or ethnicity on DEP loss. The data also shows that seniors with higher AFQT scores tend to have a lower likelihood of DEP loss, although this effect is very small. The fiscal dummies indicate an upward trend in DEP attrition over this period.

Table 6.5 estimates the Navy/CNRC model without the unemployment variable and Table 6.6 with the unemployment variable. These tables show that high school seniors who participates in the Navy College Fund (NCF) are about 3.5 percentage points less likely to attrite from the DEP. The reference program was for seniors who were guaranteed certain schools other than nuclear and technical. Seniors in technical

Table 6.6 Navy DEP Attrition Model with
Unemployment Variable (using CNRC Data), FYs 1990-1996

| Variable | Parameter Estimate | Standard Error | Pr > Chi-Square | Marginal |
|----------|-------------------|----------------|-----------------|----------|
| INTERCPT | -2.2856 | 0.0688 | 0.0001* | 0.00000 |
| AGE16_17 | -0.1496 | 0.0145 | 0.0001* | 0.12333 |
| AG19PLUS | 0.2338 | 0.0154 | 0.0001* | -0.00590 |
| FEMALE | 0.6447 | 0.0185 | 0.0001* | -0.02107 |
| BLACK | -0.037 | 0.0178 | 0.0373** | 0.01158 |
| HISPANIC | 0.0704 | 0.0189 | 0.0002* | -0.00292 |
| ASIAN | -0.1363 | 0.0493 | 0.0057* | -0.00066 |
| ROTHER | -0.0182 | 0.0544 | 0.7376 | 0.01362 |
| AFQT3A | -0.00407 | 0.0161 | 0.8007 | 0.03124 |
| AFQT3B | 0.0825 | 0.0166 | 0.0001* | -0.01237 |
| AFQT4 | 0.1838 | 0.0689 | 0.0076* | -0.02606 |
| FY91 | -0.3069 | 0.0269 | 0.0001* | 0.01104 |
| FY92 | -0.177 | 0.0394 | 0.0001* | 0.01348 |
| FY93 | -0.037 | 0.0447 | 0.4078 | -0.01119 |
| FY94 | 0.0127 | 0.0386 | 0.7413 | -0.02304 |
| FY95 | 0.1932 | 0.0302 | 0.0001* | 0.04030 |
| FY96 | 0.1464 | 0.0284 | 0.0001* | -0.00684 |
| NAVYFUND | -0.043 | 0.0235 | 0.0673*** | -0.04499 |
| AEFATF | -0.0786 | 0.0236 | 0.0009* | -0.02703 |
| NUCLEAR | -0.1703 | 0.0305 | 0.0001* | -0.00590 |
| GENDET | 0.0672 | 0.0198 | 0.0007* | 0.00206 |
| TW_3YEAR | 0.0817 | 0.0177 | 0.0001* | 0.03292 |
| FIV_6YER | -0.0709 | 0.0218 | 0.0011* | 0.02462 |
| YESBONUS | -0.1669 | 0.0283 | 0.0001* | -0.02556 |
| BFEMALE | -0.0934 | 0.0384 | 0.0149** | -0.01464 |
| MNS_DEP1 | 0.1277 | 0.00229 | 0.0001* | -0.03855 |
| DEPWAIVR | -0.259 | 0.0261 | 0.0001* | 0.02135 |
| URATE | -0.0293 | 0.0112 | 0.0091* | -0.00468 |

Sample size: 180998
-2 LOG L: 5506.849 with 27 DF (p=0.0001
Concordant ratio: 61.6 percent

Note: * significant at 1-percent level; ** significant at 5-percent level; *** significant at 10-percent level

or nuclear programs and those who signed 5- to 6-year (FIV_6YER) enlistment contracts were more likely to attrite than 4-year obligators. The attrition rate for this group is about 6 percentage points lower. Lastly, those seniors who received waivers to enter the DEP (DEPWAIVR) were 4 points less likely to attrite from the DEP than those who did not.

Table 6.7 shows a summary of the marginal effects from Tables 6.3 through 6.6. Comparing the variables across the four models, the differences in the marginal effects are small. The largest difference is for Asian seniors and there are some differences in the fiscal years, possible due to changes in policy over time. When regional unemployment data was added to the models, there were no significant changes noted in the variables. Younger high school seniors (AGE16_17) are still very likely to remain in the DEP. Compared to 18-year old seniors, they are about 12 percentage points more likely. Older seniors do tend to attrite more than did the younger seniors. Again, seniors in the lowest AFQT groups have a higher probability of dropping out of the DEP.

## Table 6.7 Marginal Effects of all CNRC Models

| Variables | Basic Model w/out Unemployment Variable | Basic Model with Unemployment Variable | With NCF and Program vars. w/out Unemployment Variable | With NCF and Program vars. with Unemployment Variable |
|---|---|---|---|---|
| INTERCPT | 0.00000 | 0.00000 | 0.00000 | 0.00000 |
| AGE16_17 | 0.12302 | 0.12249 | 0.12407 | 0.12333 |
| AG19PLUS | -0.00410 | -0.00424 | -0.00586 | -0.00590 |
| FEMALE | -0.01982 | -0.01956 | -0.02131 | -0.02107 |
| BLACK | 0.01229 | 0.01249 | 0.01170 | 0.01158 |
| HISPANIC | -0.00239 | -0.00238 | -0.00291 | -0.00292 |
| ASIAN | 0.00898 | 0.00888 | -0.00049 | -0.00066 |
| ROTHER | 0.02835 | 0.02796 | 0.01408 | 0.01362 |
| AFQT3A | 0.04726 | 0.04545 | 0.03343 | 0.03124 |
| AFQT3B | -0.02226 | -0.02225 | -0.01225 | -0.01237 |
| AFQT4 | 0.04023 | 0.03979 | -0.02604 | -0.02606 |
| FY91 | -0.04696 | -0.04166 | 0.01065 | 0.01104 |
| FY92 | -0.03531 | -0.02382 | 0.01336 | 0.01348 |
| FY93 | -0.01843 | -0.00412 | -0.01138 | -0.01119 |
| FY94 | -0.00955 | 0.00211 | -0.02294 | -0.02304 |
| FY95 | 0.02194 | 0.03036 | 0.04082 | 0.04030 |
| FY96 | 0.01455 | 0.02165 | -0.00712 | -0.00684 |
| BFEMALE | -0.01530 | -0.01452 | -0.01492 | -0.01464 |
| MNS_DEP1 | -0.03627 | -0.03480 | 0.02166 | -0.03855 |
| DEPWAIVR | 0.02024 | 0.01996 | -0.04002 | 0.02135 |
| YESBONUS | n.a. | n.a. | -0.02622 | -0.02556 |
| NAVYFUND | n.a. | n.a. | -0.05081 | -0.04499 |
| AEFATF | n.a. | n.a. | -0.03968 | -0.02703 |
| NUCLEAR | n.a. | n.a. | -0.02169 | -0.00590 |
| GENDET | n.a. | n.a. | -0.01089 | 0.00206 |
| TW_3YEAR | n.a. | n.a. | 0.04702 | 0.03292 |
| FIV_6YER | n.a. | n.a. | 0.01680 | 0.02462 |
| Unemployment | n.a. | -0.00415 | n.a. | -0.00468 |

Note: * significant at 1-percent level; ** significant at
5-percent level; *** significant at 10-percent level
n.a. = not applicable

# VII.  SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

## A.  SUMMARY

Cross-tabulation tables are presented in Chapter IV for total DEP accessions and for high school seniors DEP accessions only.  Tabulations are made by Service, gender, race, marital status, DEP waiver, and DEP discharge to estimate the accession and attrition patterns of both populations.  The tables reveal that married seniors, though small in number, had a higher likelihood of remaining in the DEP than did seniors who were single or divorced.  Female seniors who were married, on the other hand, experienced a relatively high rate of attrition. The tables also show that seniors in the Air Force had a much higher probability of signing DEP contracts for 10 to 13 months, which contrasts with patterns of shorter DEP contracts in the other services.  Across the services, women were more likely than men to sign DEP contracts for 4 to 6 months, and Blacks tended to sign for an even shorter DEP period.  Additionally, although Blacks had a higher probability than did Non-Blacks of remaining in the DEP, the difference between the two groups was only about 1 percent.

Of all the services, the Marine Corps tended to have the highest percentage of seniors in the DEP, and the Navy had the second highest percentage.  At the same time, the Marine Corps had the highest rate of attrition for high school seniors, and

the Air Force had the lowest rate.

Chapter V presents multivariate logistic regression models based on a DMDC data set. Models were run for each individual service and for DOD as a whole. Most of the variables in all of the models are significant at the 1-percent level.

In the DOD model, high school seniors had a higher rate of attrition from the Army and the Marine Corps when compared with the Navy; but, the Air Force had a lower DEP loss rate. The findings presented in all of the service-specific models show that older high school seniors tend to have a higher probability (by about 2 percentage points for DOD and 5 points for the Army) of dropping from the DEP than do their younger counterparts. The Air Force is the only exception: older seniors in this service tend to remain in the DEP at a higher rate, but only by less than one percentage point. Seniors who signed for longer DEP contracts tend to be more likely to drop out of the DEP than seniors who signed for a short DEP period (with the exception of those in the Army). The models also show that the DEP attrition rate for women averages about 16 percentage points higher than that of men. Additionally, Black women tend to have the lowest attrition rate of the race-gender groups examined here. Again, this could be linked to their limited opportunities in the civilian labor market. Further, the data reveal the following: Blacks tend to have a stronger tendency to drop out of the DEP

in the Navy and in the Army but they tend to remain longer in the Marine Corps and the Air Force DEP; married seniors tend to have a higher probability (by about 5 percentage points) of remaining in the DEP; seniors who are in the lower AFQT categories tend to have a noticeably higher DEP dropout rate than do recruits in higher AFQT categories; and high school seniors who were previously in the DEP tend to have a lower dropout rate than do those who are in the DEP for the first time. Finally, the analysis shows that unemployment rates have a small but negative effect on the attrition probability of high school seniors.

In Chapter VI, results are shown for multivariate regression models that use a Navy-only data set from CNRC with and without unemployment rates. Variables for personal characteristics, recruiting policies, and economic condition variable were also included in these models, along with variables for the Navy College Fund (NCF) and the type of program for which high school seniors signed. The results are generally similar to that found in Chapter V using DMDC data. Variables for Hispanic and Asian ethnicity were also included in this model. The percentage change for either of these variables was very small. Also noted, seniors who received the NCF were about 3 percentage points less likely to drop out of the DEP than were those who did not sign up for the NCF. Additionally,

of the program variables, only recruits in nuclear programs and those with enlistment contracts for two or three years had a lower likelihood of DEP attrition.

## B.   CONCLUSIONS

This thesis focused on the attrition behavior of high school seniors in the DEP.   A strong relationship was found between age and DEP attrition by seniors.   That is, if seniors are older than their peers, their attrition rate from the DEP tends to be significantly higher.   The reason for this could be failure to graduate from high school, which was also found to be one of the important reasons for DEP attrition.   High school seniors in lower AFQT categories were also found to have a relatively high likelihood of dropping out of the DEP.

Among the personal characteristics studied here, gender, race, dependent status, and educational status have the largest influence on DEP attrition.   Blacks and married seniors were less likely to attrite from the DEP, but women tended to have a much higher probability of attrition than did men. Additionally, Black women showed a lower probability of dropping out of the DEP.   Seniors who received the NCF were also found to be less likely to drop out of the DEP.

Contrary to expectations, high school seniors who signed longer DEP contracts were more likely to drop out of the DEP than were seniors who signed shorter DEP contracts.   The reason

for this could be because, while in the DEP, seniors are concentrating more on finishing high school; but, as the time for enlistment draws near, these seniors realize that they do not really want to enlist in the military. They also have the opportunity to seek other career opportunities and perhaps find a civilian job that is more appealing to them.

## C. RECOMMENDATIONS

Several of the findings in the present study correspond with those found by other researchers. For example, the findings in this thesis suggest that recruiters should continue to concentrate their efforts on high school seniors who are younger and in the higher AFQT groups. At the same time, special measures may be needed to reduce the rate of DEP attrition by female seniors.

High school seniors also tended to have a higher rate of attrition if they had long DEP contracts. It may be better to target seniors for recruitment when they are about half-way through their final year of high school. It is not clear whether this approach is feasible.

## D. AREAS FOR FUTURE RESEARCH

Future research should seek to interview high school seniors who drop out of the DEP on their reasons for leaving the program. When seniors drop out of the DEP voluntarily, the only

cause or reason recorded in their record is "failure to obligate." A more detailed explanation of reasons for leaving the DEP would assist recruiting officials in their efforts to reduce DEP attrition.

A study similar to the one conducted here could be undertaken, but it should incorporate metropolitan or country unemployment data. This could not be done in the present study because such data were unavailable to the researcher.

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